

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

- New Approach to Finite-State Modeling of Unsteady Aerodynamics J86-347
 Transonic Vortex Flows Past Delta Wings: Integral Equation Approach J86-315
 Second-Order Thickness Terms in Unsteady Wing Theory J86-301
 Aerodynamics of Two-Dimensional Blade-Vortex Interaction J86-283
 Propeller Design by Optimization J86-275
 Computation of Sharp-Fin-Induced Shock Wave/Turbulent Boundary-Layer Interactions J86-256
 Vortex Panel Calculation of Wake Rollup Behind a Large Aspect Ratio Wing J86-254
 Cancellation Zone in Supersonic Lifting Wing Theory J86-239
 Computation of the Potential Flow over Airfoils with Cusped or Thin Trailing Edges J86-238
 Recent Developments in Rotary-Wing Aerodynamic Theory J86-217
 Trapping of a Free Vortex by Airfoils with Surface Suction J86-216
 Integration of Singular Functions Associated with Lifting Surface Theory J86-206
 Lifting-Line Solution for a Symmetrical Thin Wing in Ground Effect J86-205
 Computation of Transonic Flow About Helicopter Rotor Blades J86-128
 Unsteady Vortical Flow Around Three-Dimensional Lifting Surfaces J86-127
 Airfoil Computation at High Angles of Attack, Inviscid and Viscous Phenomena J86-126
 Simulation of Inviscid Vortex-Stretched Turbulent Shear-Layer Flow J86-115
 Dynamic Stall Inception Correlation for Airfoils Undergoing Constant Pitch Rate Motions J86-114
 Finite Element Solutions of Euler Equations for Lifting Airfoils J86-097
 Euler and Navier-Stokes Solutions for Flow over a Conical Delta Wing J86-096
 Aerodynamic Characteristics of a Flexible Membrane Wing J86-095
 Euler Calculations for Multielement Airfoils Using Cartesian Grids J86-060
 The Response of Airfoils to Periodic Disturbances--The Unsteady Kutta Condition J86-031

Aeroelasticity

- The Role of Damping on Supersonic Panel Flutter J85-295

Flight Displays

- Computation of Choked and Supersonic Turbomachinery Flows by a Modified Potential Method J85-034

Propeller and Rotor Systems

- Application of Time-Domain Unsteady Aerodynamics to Rotary-Wing Aeroelasticity J86-255

- Finite Element Navier-Stokes Calculation of Three-Dimensional Turbulent Flow Near a Propeller J86-253
 Measurements of Three-Dimensional Turbulent Flow Behind a Propeller in a Shear Flow J86-098

Fluid Dynamics

Aeroacoustics

- The Effect of Phase-Difference on the Spreading Rate of a Jet J86-353
 Phase Averaged Transverse Vorticity Measurements in an Excited, Two-Dimensional Mixing Layer J86-289
 Interactions of Coupled Acoustic and Vortical Instability J86-285
 Investigation of the Acoustic Boundary Layer in Porous-Walled Ducts with Flow J86-264
 Two-Dimensional Blade-Vortex Flow Visualization Investigation J86-263
 Turbulent Flow Around a Wing/Fuselage-Type Junction J86-260
 Observations on the Structure of an Edge-Tone Flowfield J86-243
 Effect of Blunt Trailing Edge on Rotor Broadband Noise J86-241
 Noise Control Characteristics of Synchrophasing, Part 2: Experimental Investigation J86-223
 An Iterative Finite Element-Integral Technique for Predicting Sound Radiation from Turbofan Inlets in Steady Flight J86-221
 Nonisentropic Propagation of Sound in Uniform Ducts Using Euler Equations J86-188
 Noise Control Characteristics of Synchrophasing, Part 1: Analytical Investigation J86-184
 Numerical Evaluation of Propeller Noise Including Nonlinear Effects J86-178
 The Influence of Source Location on the Structural-Acoustic Interaction of Cylinders J86-162
 Flight Effects on Noise from Coaxial Dual Flow, Part II: Heated Jets J86-160
 Fine Structure of Subsonic Jet Noise J86-144
 Flight Effects on Noise from Coaxial Dual Flow Part I: Unheated Jets J86-133
 Wave Envelope and Finite Element Approximations for Turbofan Noise Radiation in Flight J86-132
 Frequency Characteristics of Discrete Tones Generated in a High Subsonic Jet J86-122
 Turbulent Boundary-Layer Wall Pressure Fluctuations Downstream of a Tandem LEBU J86-120
 Prediction of Advanced Propeller Noise in the Time Domain J86-099
 Higher Order Parabolic Approximations for Sound Propagation in Stratified Moving Media J86-040
 Airfoil Tip Vortex Formation Noise J86-039
 Pressure Fluctuations on Hypersonic Vehicles Due to Boundary-Layer Instabilities J86-028

- Time-Dependent Wave Envelope Finite Difference Analysis of Sound Propagation J86-005
 Laser Velocimeter Measurements of Large-Scale Structures in a Tone-Excited Jet J86-004

Boundary Layers and Convective Heat Transfer-Laminar

- Boundary-Layer Flow Past a Cylinder with Massive Blowing J86-338
 Determination of the Separation Point in Laminar Boundary-Layer Flows J86-291
 Variational Solution of Blasius Flow for Skin Friction and Heat Transfer J86-259
 Navier-Stokes Solutions for Laminar Incompressible Flows in Forward-Facing Step Geometries J86-191
 Coupling Conditions for Integrating Boundary Layer and Rotational Inviscid Flow J86-173
 Forced Convection over Rotating Bodies with Blowing and Suction J86-147
 Calculation of Separation Bubbles Using Boundary-Layer-Type Equations J86-100
 Reversed Flow Above a Plate with Suction J86-052
 Subcooled Forced-Convection Film Boiling in the Presence of a Pressure Gradient J86-037
 Heat Transfer Due to Axial Turbulent Flow Along a Circular Rod J86-027
 Improved Series Solutions of Falkner-Skan Equation J85-162

Boundary Layers and Convective Heat Transfer-Turbulent

- Synthetically Generated Turbulent Boundary-Layer Development and Structure J86-359
 Compressible Separated Flows J86-357
 Turbulence Modeling for Complex Shear Flows J86-349
 Comparison of Pressure-Strain Correlation Models for the Flow Behind a Disk J86-336
 Separated Flow Treatment with a New Turbulence Model J86-306
 Inverse Mode Calculations of the Incompressible Turbulent Boundary Layer on an Ellipsoid J86-290
 Two-Dimensional Separating Turbulent Boundary Layers J86-288
 Turbulent Time Scale for Turbulent-Flow Calculations J86-287
 Investigation of Surface Roughness Effects on Adiabatic Wall Temperature J86-278
 Modification of the Karman-Vortex Street in the Freestream J86-276
 Turbulent Boundary-Layer Modification by Surface Riblets J86-242
 Airfoil Trailing-Edge Flow Measurements J86-218
 Shock/Turbulent Boundary-Layer Interaction with Wall Function Boundary Conditions J86-212
 Surface Renewal Model for Turbulent Boundary-Layer Flow J86-208

- The Effects of Cylindrical Surface Modifications on Turbulent Boundary Layers J86-187
- Triple-Velocity Products in a Channel with a Backward-Facing Step J86-177
- Pressure-Strain Correlations in Curved Wall Boundary Layers J86-164
- Viscous/Inviscid Analysis of Transonic Shock-Induced Separation Including Normal Pressure Gradients J86-135
- Modification of Vortex Interactions in a Reattaching Separated Flow J86-106
- Limitations of the Near-Wall $k-\epsilon$ Turbulence Model J86-105
- Discrimination of Coherent Features in Turbulent Boundary Layers by the Entropy Method J86-064
- Application of Two-Dimensional Velocity Profile to Three-Dimensional Boundary-Layer Flow J86-063
- Effective Velocity of Transport in Curved Wall Boundary Layers J86-062
- Turbulence Models for Wall Boundary Layers J86-061
- A Study of Compressible Turbulent Reattaching Free Shear Layers J86-041
- Similarity of Quasiconical Shock Wave/Turbulent Boundary-Layer Interactions J86-007
- Conical Similarity of Shock/Boundary-Layer Interactions Generated by Swept and Unswept Fins J85-179
- Turbulence Modeling for Three-Dimensional Shear Flows over Curved Rotating Bodies J84-295
- Boundary-Layer Stability and Transition**
- Spacing of Streamwise Vortices on Concave Walls J86-304
- Modeling of Transition and Surface Roughness Effects in Boundary-Layer Flows J86-292
- Flow Induced at a Wall by a Vortex Pair J86-286
- Active Transition Fixing and Control of the Boundary Layer in Air J86-284
- Numerical Simulation of Boundary-Layer Excitation by Surface Heating/Cooling J86-189
- Experimental Studies of Spontaneous and Forced Transition on an Axisymmetric Body J86-067
- Effect of Suction and Weak Mass Injection on Boundary-Layer Transition J86-065
- Numerical-Perturbation Technique for Stability of Flat-Plate Boundary Layers with Suction J86-034
- Experiments on the Stability of the Flat-Plate Boundary Layer with Suction J86-033
- Computational Methods**
- Incremental Multigrid Strategy for the Fluid Dynamic Equations J86-367
- Artificial Dissipation Models for the Euler Equations J86-352
- Multigrid Solution of the Euler Equations Using Implicit Schemes J86-316
- Grid Size Dependence on Convergence for Computation of the Navier-Stokes Equations J86-303
- Influence of Trailing-Edge Meshes on Skin Friction in Navier-Stokes Calculations J86-277
- Comparison of Finite Volume Flux Vector Splittings for the Euler Equations J86-261
- Convergence Acceleration for a Three-Dimensional Euler/Navier-Stokes Zonal Approach J86-257
- Numerical Solution to Rarefaction or Shock Wave/Duct Area-Change Interaction J86-245
- Numerical Studies of Motion and Decay of Vortex Filaments J86-226
- Computations of the Contraction Coefficient of Unsymmetrical Bends J86-225
- Generation of Computational Grids Using Optimization J86-185
- An Accurate Spatial Differencing Scheme for a Three-Dimensional Full Potential Equation J86-182
- Three-Dimensional Adaptive Grid Method J86-161
- Direct and Inverse Problem in Supersonic Axisymmetric Flow J86-146
- Counterrotating Streamline Pattern in a Transitional Separation Bubble J86-145
- An Incremental Block-Line-Gauss-Seidel Method for the Navier-Stokes Equations J86-134
- An Implicit Form for the Osher Upwind Scheme J86-130
- Finite Volume Solution of the Two-Dimensional Euler Equations on a Regular Triangular Mesh J86-104
- Shock Waves in Transonic Channel Flows at Moderate Reynolds Numbers J86-101
- Local Cell Orientation Method J86-089
- A Perturbative Lambda Formulation J86-069
- Application of a Variational Method for Generating Adaptive Grids J86-068
- Numerical Simulation of Leading-Edge Vortex Flows J86-038
- Implicit Conservative Schemes for the Euler Equations J86-035
- An Implicit LU Scheme for the Euler Equations Applied to Arbitrary Cascades J86-006
- Vectorized Schemes for Conical Potential Flow Using the Artificial Density Method J86-002
- A Strongly Implicit Procedure for the Compressible Navier-Stokes Equations J86-001
- Computation of Choked and Supersonic Turbomachinery Flows by a Modified Potential Method J85-034
- Turbulence Modeling for Three-Dimensional Shear Flows over Curved Rotating Bodies J84-295
- Hydrodynamics**
- Algorithm for Energy-Derived Potential Flow Hydrodynamic Coefficients J86-183
- Jets, Wakes, and Viscid-Inviscid Flow Interactions**
- Turbulence Intensities in the Near-Wake of a Semielliptical Afterbody J86-366
- Transient Behavior of Liquid Jets Injected Normal to a High-Velocity Gas Stream J86-358
- Augmented Thrust and Mass Flow Associated with Two-Dimensional Jet Reattachment J86-356
- Control of Coherent Structures in Reattaching Laminar and Turbulent Shear Layers J86-355
- Large-Scale Effects on Local Small-Scale Chaotic Solutions to Burgers' Equation J86-351
- Interaction Between Two Compressible, Turbulent Free Shear Layers J86-350
- Reverse Flow Radius in Vortex Chambers J86-337
- Turbulent Mixing in Two-Dimensional Ducts with Transverse Jets J86-335
- Characteristics of Jet Impingement in a Side-Dump Combustor J86-318
- Wake Periodicity in Subsonic Bluff-Body Flows J86-302
- Planar Imaging of a Turbulent Methane Jet J86-280
- The Flame Structure and Vorticity Generated by a Chemically Reacting Transverse Jet J86-268
- Numerical Simulations of Active Stabilization of Laminar Boundary Layers J86-267
- Investigation of Flow Structures of a Basic Annular Jet J86-266
- Relative Efficiencies for Parallel and Perpendicular Entrainment Flow Paths J86-258
- Local Equilibrium Assumption for Round Jet Calculations J86-244
- Passive Control of Jets with Indeterminate Origins J86-222
- Parabolized Navier-Stokes Analysis of Three-Dimensional Supersonic and Subsonic Jet Mixing Problems J86-219
- Experimental Study of Surface Pressure in Three-Dimensional Turbulent Jet/Boundary Interaction J86-209
- Turbulent Flow in Square Ducts After an Expansion J86-165
- Behavior of Wall Jet in Laminar-to-Turbulent Transition J86-159
- Interaction of Two Nonequal Jets J86-118
- Visualization of a Forced Elliptic Jet J86-117
- Turbulent Boundary Layers with Vectorized Mass Transfer J86-088
- An Analytical Model for the Vorticity Associated with a Transverse Jet J86-072
- Scaling of Impulsively Started, Incompressible, Laminar Round Jets and Pipe Flows J86-071
- Interaction of Multiple Supersonic Jets with a Transonic Flowfield J86-070
- Formation and Inflammation of a Turbulent Jet J86-036
- The Calculation of Turbulent Wakes J86-032
- Jet Penetration Height in Transonic Flow J86-010
- Conical Similarity of Shock/Boundary-Layer Interactions Generated by Swept and Unswept Fins J85-179
- Numerical Simulation of Cold Flow in an Axisymmetric Centerbody Combustor J85-104
- Multiphase Flows**
- Quasi-One-Dimensional Gas/Particle Nozzle Flows with Shock J86-207
- A Prediction of Particle Behavior via the Basset-Boussinesq-Oseen Equation J85-288
- Nonsteady Aerodynamics**
- Unsteady Wake Measurements of an Oscillating Flap at Transonic Speeds J86-348
- Acceleration-Dependent Fluid Forces J86-339
- Transient Induced Drag J86-210
- Numerical Simulation of Cold Flow in an Axisymmetric Centerbody Combustor J85-104
- Nozzle and Channel Flow**
- Injection-Induced Flows in Porous-Walled Ducts J86-320
- Theoretical and Experimental Description for a Radial Supersonic Flowfield J86-319

- Formulas for Venting or Charging Gas from a Single Volume J86-305
Nonuniform Nozzle Flow Effects on Base Pressure at Supersonic Flight Speeds J86-213

- Transonic Potential Flow in Hyperbolic Nozzles J86-175
In-Bore Velocity Measurements in the Wake of a Subsonic Projectile J86-174
An Experimental Investigation of the Mixing of Coannular Swirling Flows J86-136
Mach Reflection and Aerodynamic Choking in Two-Dimensional Ducted Flow J86-123
Analysis of Transonic Flow with Shock in Slender Hyperbolic Nozzles J86-086
Structure of Self-Excited Oscillations in Transonic Diffuser Flows J86-008

Plasmadynamics and MHD

- An Experimental Investigation of Cusped Magnetic Field Discharge Chambers J86-003

Reactive Flows

- Spectral Methods for Modeling Supersonic Chemically Reacting Flowfields J86-262
N Atom Measurements in High-Temperature N₂ Dissociation Kinetics J86-190
Direct Numerical Simulations of a Reacting Mixing Layer with Chemical Heat Release J86-163

Shock Waves and Detonations

- Quasi-Conservative Lambda Formulation J86-224
Experimental Investigation of Shock-Interface Interactions J86-220
Navier-Stokes Analysis of Muzzle-Blast-Type Waves J86-138
Quasilinear Form of Rankine-Hugoniot Jump Conditions J86-121
Application of Steady Shock Polars to Unsteady Shock Wave Reflections J86-116
Blast Wave Reflection Trajectories from a Height of Burst J86-103

Subsonic Flow

- Wavy Wall Solutions of the Euler Equations J86-368
Axisymmetric Shear Flow over Spheres and Spheroids J86-107
Material Contravariant Components: Vorticity Transports and Vortex Theorems J86-087

Supersonic and Hypersonic Flow

- Calculation of Supersonic Flows with Strong Viscous-Inviscid Interaction J86-354
Constant-Density Approximation to Taylor-Maccoll Solution J86-279
Experimental and Numerical Investigation of Supersonic Turbulent Flow Through a Square Duct J86-269
Unified Supersonic/Hypersonic Similitude for Oscillating Wedges and Plane Ogives J86-211
Experimental Study of Supersonic Turbulent Flow on a Blunted Axisymmetric Body J86-137
Experimental and Computational Study of a Swept Compression Corner Interaction Flowfield J86-131
A Method for the Design of Shock-Free Slender Bodies of Revolution J86-129
Transonic, Turbulent Boundary-Layer Separation Generated on an Axisymmetric Flow Model J86-073

- Conical Similarity of Shock/Boundary-Layer Interactions Generated by Swept and Unswept Fins J85-179

Transonic Flow

- Navier-Stokes Computations of Transonic Flows with a Two-Equation Turbulence Model J86-317
Transonic Airfoil Calculations Including Wind Tunnel Wall-Interference Effects J86-240
Far-Field Boundary Conditions for Transonic Lifting Solutions to the Euler Equations J86-186
Comparative Study Between Two Navier-Stokes Algorithms for Transonic Airfoils J86-102
Computed and Measured Wall Interference in a Slotted Transonic Test Section J86-074
A Three-Dimensional Incompressible Navier-Stokes Flow Solver Using Primitive Variables J86-066
Computation of Choked and Supersonic Turbomachinery Flows by a Modified Potential Method J85-034

Viscous Nonboundary-Layer Flows

- Numerical Experiments of Axisymmetric Flow in a Nonuniform Gravitational Field J86-265
Numerical Solution of Steady Navier-Stokes Problems Using Integral Representations J86-228
Development of an Iterative Boundary-Layer-Type Solver for Axisymmetric Separated Flows J86-227
Vorticity with Variable Viscosity J86-176
Inlet Vortex Formulation due to Ambient Vorticity Intensification J86-119
Monte Carlo Turbulence Simulation Using Rational Approximations to von Kármán Spectra J86-009
A Prediction of Particle Behavior via the Basset-Boussinesq-Oseen Equation J85-288

Interdisciplinary Topics

Aerospace Technology Utilization

- Two-Dimensional Model of Laser-Sustained Plasmas in Axisymmetric Flowfields J86-231

Analytical and Numerical Methods

- A Prediction of Particle Behavior via the Basset-Boussinesq-Oseen Equation J85-288

Lasers and Laser Applications

- Theoretical Gain Optimization in CO₂-N₂-H₂ Gasdynamic Lasers with Two-Dimensional Wedge Nozzles J86-369
Sidewall Muffler Design for Pulsed Excimer Lasers J86-321
Power Absorption in Laser-Sustained Argon Plasmas J86-295
Continuous Wave Laser Gas Heating by Sustained Plasmas in Flowing Argon J86-294
Laser-Induced Thickness Stretch Motion of a Transversely Constrained Irradiated Slab J86-293
Convective and Free Surface Instabilities Provoked by Heating Below an Interface J86-230
Mixing Enhancement in Chemical Lasers, Part I: Experiments J86-193

- Performance of High-Power Gas-Flow Spark Gaps J86-192
Cavity Flow Control for Supersonic Lasers J86-054

Research Facilities and Instrumentation

- Migration of the Separation Point on a Deforming Cylinder J86-322
Noninvasive Experimental Technique for the Measurement of Unsteady Velocity Fields J86-308
Measurement of the Speed of Sound in Ice J86-307
Modern Developments in Flow Visualization J86-229
Mach Number Control of Ludwig Tubes J86-076
Accuracy and Directional Sensitivity of the Single-Wire Technique J86-075
Aerodynamic Design of Three-Dimensional Subsonic Wind Tunnel Inlets J86-042
Resonant Holographic Detection of Hydroxyl Radicals in Reacting Flows J86-011

Propulsion

Airbreathing Propulsion

- Roto: Wake Characteristics of a Transonic Axial-Flow Fan J86-325
Calculating the Statistics of Forced Response of a Mistuned Bladed Disk Assembly J86-324
Effect of Two Endwall Contours on the Performance of an Annular Nozzle Cascade J86-271
Laser Anemometer Measurements in a Compressor Rotor Flowfield at Off-Design Conditions J86-232
Laser Doppler Velocimeter Measurement in the Tip Region of a Compressor Rotor J86-139
Measurements of Mean Velocity and Turbulent Intensities in a Free Isothermal Swirling Jet J86-047
Unsteady Transonic Flow over Cascade Blades J86-046
Aerodynamic Performance of an Annular Flat Plate Airfoil Cascade with Nonuniform Inlet Velocity J86-043
Nonaxisymmetric Compressible Swirling Flow in Turbomachine Annuli J86-013
Turbulence Modeling for Three-Dimensional Shear Flows over Curved Rotating Bodies J84-295

Combustion and Combustor Designs

- Chemical Kinetic Modeling of Higher Hydrocarbon Fuels J86-361
Two-Dimensional Shear-Layer Entrainment J86-323
Multiple-Scale Turbulence Model in Confined Swirling Jet Predictions J86-309
Rocket Motor Flow-Turning Losses J86-246
Swirl Generator for Independent Variation of Swirl and Velocity Profile J86-214
CARS Measurements in the Near-Wake Region of an Axisymmetric Bluff-Body Combustor J86-199
Studies of Turbulent Flow-Flame Interaction J86-198
Laser Scattering Measurements for Gas Densities in a Swirling Flow Combustor J86-195
New Formulation for One-Dimensional Premixed Flames J86-194

Laser Measurements and Stochastic Simulations of Turbulent Reacting Flows

J86-158
Laser Measurements on Nonpremixed H₂ Air Flames for Assessment of Turbulent Combustion Models J86-157

Multidimensional Gas Turbine Combustion Modeling: Applications and Limitations

J86-156
Implications of Recent Experimental Results for Modeling Reactions in Turbulent Flows J86-155
The Two-Fluid Model of Turbulence Applied to Combustion Phenomena J86-154
Asymptotic Methods in Turbulent Combustion J86-153

Aluminum Combustion at 40 Atmospheres Using a Reflected Shock Wave

J86-148
Theoretical and Experimental Studies on Vortex Chamber Flows J86-108

Calculation of Axisymmetric, Turbulent, Confined Diffusion Flames

J86-077
Effects of Electric Fields on the Flame Propagation Velocity of Methane-Air Flame J86-029

Drop-Turbulence Interactions in a Diffusion Flame

J86-014
Numerical Simulation of Cold Flow in an Axisymmetric Centerbody Combustor J85-104

Combustion Stability, Ignition, and Detonation

Ignition of a Fuel Spray by a Hot Surface J86-360

Coalescence/Dispersion Modeling of Turbulent Combustion in Jet-Stirred Reactor

J86-327
Detonability of RDX Dust in Air/Oxygen Mixtures J86-326

Particle Radiative Feedback in Ammonium Perchlorate Deflagration

J86-197
Flow Structure in Near-Nozzle Region of Gas Jet Flames J86-196

Intermittency and Conditional Averaging in a Turbulent Nonpremixed Flame by Raman Scattering

J86-140
Experimental Verification of Temperature Fluctuations During Combustion Instability J86-055

The Viscous Wall-Layer Effect in Injected Porous Pipe Flow

J86-045
The Deflagration-to-Detonation Transition Process for High-Energy Propellants--A Review J86-012

Electric and Advanced Space Propulsion

Calculation of Plasma Properties in Ion Sources J86-270

The Effect of Discharge Chamber Wall Temperature on Ion Thruster Performance

J86-044

Fuels and Propellants, Properties of

Optical Constants of Propellant-Grade Ammonium Perchlorate J86-340

Solid and Hybrid Rocket Engines

Low-Pressure Burning of Catalyzed Composite Propellants J86-296

Spiral Vortices and Liquid Breakup

J86-149

Spacecraft Technology

Dynamics and Control

Stiffness Matrix Adjustment Using Mode Data J85-252

Structural Mechanics and Materials

Aeroelasticity and Hydroelasticity

Application of Diverging Motions to Calculate Loads for Oscillating Motions J86-312

Role of Shocks in Transonic/Supersonic Compressor Rotor Flutter

J86-203
Weight Minimization of Orthotropic Flat Panels Subjected to a Flutter Speed Constraint J86-167

An Iterative Procedure for Nonlinear Flutter Analysis

J86-142
Computation of Second-Order Accurate Unsteady Aerodynamic Generalized Forces J86-082

Materials, Properties of

Bounding Solutions of Geometrically Nonlinear Viscoelastic Problems J86-331

Structural Composite Materials

Arbitrarily Laminated, Anisotropic Cylindrical Shell Under Internal Pressure J86-332

Nonlinear Finite Element Analysis of Thick Composite Plates Using Cubic Spline Functions

J86-330
Importance of Anisotropy on Buckling of Compression-Loaded Symmetric Composite Plates J86-329

Experimental Investigation on Advanced Composite-Stiffened Structures Under Uniaxial Compression and Bending

J86-328
Buckling of Composite Plates Using Shear Deformable Finite Elements J86-311

Large-Amplitude Dynamic Analysis of Composite Moderately Thick Elliptical Plates

J86-300
Optimum Design of Composite Honeycomb Sandwich Panels Subjected to Uniaxial Compression J86-299

Nonlinear Theory for Plates and Shells Including the Effects of Transverse Shearing

J86-273
Critical Shear Loading of Curved Sandwich Panels Faced with Fiber-Reinforced Plastic J86-272

Stress Analysis of a Mode I Edge Delamination Specimen for Composite Materials

J86-200
Low-Velocity Impact Damage in Graphite-Epoxy Laminates Subjected to Tensile Initial Stresses J86-078

Eigenvalue Similarity Rules for Symmetric Cross-Ply Laminated Plates

J86-021
Ultimate Axial Load Capacity of a Delaminated Beam-Plate J86-017

Compression Behavior of $\pm 45^\circ$ -Dominated Laminates with a Circular Hole or Impact Damage

J86-016
Transient Thermal Behavior of Directional Reinforced Composites: Applicability Limits of Homogeneous Property Model J86-015

Buckling of Composite Plates with a Free Edge in Edgewise Bending and Compression

J84-076

Structural Design

Alternative Approximation Concepts for Space Frame Synthesis J86-297

Nonlinear Analysis of Anisotropic Panels

J86-274

Hybrid Singular Element Design for the Bending Analysis of Bimaterial Thin Cracked Plates

J86-248
Stress Analysis Method for a Clearance-Fit Bolt Under Bearing Loads J86-234

First- and Second-Order Sensitivity Analysis of Linear and Nonlinear Structures

J86-204
Geometric Programming Strategies in Large-Scale Structural Synthesis J86-202

Design Derivatives of Eigenvalues and Eigenfunctions for Self-Adjoint Distributed Parameter Systems

J86-201
Comparison Between the Variational and Implicit Differentiation Approaches to Shape Design Sensitivities J86-172

Computational Method for Optimization of Structural Shapes

J86-169
Eigenvalue Reanalysis of Locally Modified Structures Using a Generalized Rayleigh's Method J86-166

Sensitivity Analysis of Discrete Structural Systems

J86-141
Design-Oriented Identification of Critical Times in Transient Response J86-110

Finite Element Analysis of Elastoplastic Contact Problems with Friction

J86-057

Structural Durability (including Fatigue and Fracture)

Fatigue Lifetime Estimation of Structures Subjected to Dynamic Loading J86-236

Structural Dynamics

Dynamic Analysis Using a Reduced Basis of Exact Modes and Ritz Vectors J86-364

Equilibrium Configurations and Energies of the Rotating Elastic Cable in Space

J86-362
Identification of Structural Dynamic Systems with Nonproportional Damping J86-341

An Approach for Reducing Computational Requirements in Modal Identification

J86-313
Free Vibration of Rectangular Plates with Two Symmetrically Distributed Clamps Along One Edge J86-298

Optimal Structural Modifications to Enhance the Active Vibration Control of Flexible Structures

J86-237
Random Response of Beams and Plates with Slipping at Support Boundaries J86-235

Simplified Lattice Beam Elements for Geometrically Nonlinear Static, Dynamic, and Postbuckling Analysis

J86-233
Vibration of a Large Space Beam Under Gravity Effect J86-215

Stationary Response to Second-Order Filtered White-Noise Excitation

J86-181
Toward a Consistent Plate Theory J86-180

Constraints of the Structural Modal Synthesis

J86-179
Component Mode Synthesis of a Vehicle Structural-Acoustic System Model J86-171

Large Amplitude Free Vibrations of Shells of Variable Thickness--A New Approach

J86-168
Mean Square Response to Band-Limited White Noise Excitation J86-150

Step Relaxation Method for Modal Test Implemented with Frequency-Domain Preprocessing

J86-111
Nonlinear Multimode Response of Clamped Rectangular Plates to Acoustic Loading J86-109

Vibrations of Infinitely Long Cylindrical Shells of Noncircular Cross Section

J86-092

- A Generalization of Caughey's Normal Mode Approach to Nonlinear Random Vibration Problems J86-090
- Effects of Structural Modes on Vibratory Force Determination by the Pseudoinverse Technique J86-084
- Double Least Squares Approach for Use in Structural Modal Identification J86-083
- Free Vibration of Stiffened Rectangular Plates Using Green's Functions and Integral Equations J86-081
- Complex Modal Analysis of Random Vibrations J86-056
- Penalty Finite Element Models for Nonlinear Dynamic Analysis J86-049
- Natural Vibration and Buckling of General Periodic Lattice Structures J86-023
- Identification of Nonlinear Structural Elements by Force-State Mapping J86-022
- Modeling Global Structural Damping in Trusses Using Simple Continuum Models J86-020
- Stiffness Matrix Adjustment Using Mode Data J85-252

Structural Stability

- Postbuckling of Thick Circular Plates with Edges Restrained Against Rotation J86-342
- Analogy for Postbuckling Structural Resistance Capability J86-310
- Postbuckling Analysis Using a General-Purpose Code J86-170
- Buckling of Irregular Plates by Splined Finite Strips J86-091

- Nonlinear and Buckling Analysis of Continuous Bars Lying on Rigid Supports J86-080
- Formulation of an Imperfect Quadrilateral Doubly Curved Shell Element for Postbuckling Analysis J86-048
- Buckling of Quasisinusoidally Corrugated Plates in Shear J86-019
- Buckling of Composite Plates with a Free Edge in Edgewise Bending and Compression J84-076

Structural Statics

- Stress Analysis of Short Beams J86-247
- Generic Kármán-Rostovstev Plate Equations in an Affine Space J86-079
- The Variational Energy Formulation for the Integrated Force Method J86-018
- Stiffness Matrix Adjustment Using Mode Data J85-252

Thermal Stresses

- Transient Thermal Behavior of a Thermally and Elastically Orthotropic Medium J86-112

Thermophysics and Thermochemistry

Ablation, Pyrolysis, Thermal Decomposition and Degradation (including Refractories)

- Pyrolysis-Induced Fragmentation and Blow-off of Laser-Irradiated Surfaces J86-334
- Reaction of High-Velocity Atomic Oxygen with Carbon J86-113

Heat Conduction

- Contact Heat Transfer—The Last Decade J86-085
- Transient Conduction in a Cylinder in an Infinite Conductive Medium with Contact Resistance J86-059
- Transient Heat-Transfer Analysis of a Conical Cathode of an MPD Arcjet J86-058
- Green's Functions and Numbering System for Transient Heat Conduction J86-051
- Combined Function Specification-Regularization Procedure for Solution of Inverse Heat Conduction Problem J86-026

Radiation and Radiative Heat Transfer

- Evaluation of Emission Integrals for the Radiative Transport Equation J86-371
- Radiative Entropy Production J86-333

Thermal Modeling and Analysis

- Scaling Relations for Heating During Gliding Entry at Parabolic Speed J86-370
- Improved Forced Convective Heat-Transfer Correlations for Liquids in the Near-Critical Region J86-365
- Analytical and Numerical Solutions for Natural Convection in a Corner J86-143
- Thermophoretically Augmented Mass Transfer Rates to Solid Walls Across Laminar Boundary Layers J86-025
- Convection in Eccentric Annuli with Inner Cylinder Rotation J86-024

Thermophysical Properties of Matter

- A Method for Measuring Optical Properties of Semitransparent Materials at High Temperatures J86-050

Author Index

- Acharya, M., J86-292
 Adamczyk, J. J., J86-046
 Adamson, T. C., Jr., J85-034, J86-101
 Addy, A. L., J86-041, J86-213, J86-350, J86-357
 Adelman, H. M., J86-141
 Afzal, N., J85-162
 Akay, H. U., J86-097
 Ali, S. K., J86-258
 Amano, R. S., J86-177, J86-336
 Amatucci, V. A., J86-213
 Anderson, M. S., J86-023
 Anderson, W. K., J86-261
 Ardonceau, P. L., J86-238
 Arieli, R., J86-128
 Armenakas, A. E., J86-092
 Arnold, G. S., J86-113
 Arpaci, V. S., J86-333
 Asadi, A., J86-365
 Ashurst, W. T., J86-158
 Aubert, A. C., J86-022
 Azzazy, M., J86-011
 Bachalo, W. D., J86-073
 Bacher, E. V., J86-242
 Baeder, J. D., J86-283
 Balageas, D. L., J86-015
 Balaraman, K., J86-332
 Ballal, D. R., J86-198
 Banerjee, B., J86-168
 Barnett, M., J86-354
 Barton, J. T., J86-126
 Baruch, M., J86-310
 Batill, S. M., J86-042
 Baumeister, K. J., J86-005
 Bayliss, A., J86-189
 Baysal, O., J86-138
 Beauchamp, P., J86-368
 Beck, J. V., J86-026, J86-051
 Beddini, R. A., J86-320
 Beeler, G. B., J86-120
 Behar, S., J86-318
 Beiner, L., J86-167
 Ben-Dor, G., J86-116
 Ben-Reuven, M., J86-045
 Bender, T. D., J86-294
 Bendiksen, O. O., J86-203
 Berman, A., J85-252
 Bernard, P. S., J86-105
 Bernecker, R. R., J86-012
 Berry, D. T., J86-233
 Bhashyam, A. T., J86-194
 Bhattacharjee, S., J86-106
 Bicen, A. F., J86-174
 Biggers, S. B., J84-076
 Blackwelder, R. F., J86-304
 Bober, L. J., J86-178
 Bodapati, S., J86-348
 Bogar, T. J., J86-008
 Bogdonoff, S. M., J85-179
 Booth, E. R., Jr., J86-263
 Botkin, M. E., J86-172
 Bracco, F. V., J86-071
 Bradley, P. F., J86-002
 Bradley, R. P., J86-199
 Breidenthal, R. E., J86-335
 Brewster, M. Q., J86-197, J86-340
 Broadwell, J. E., J86-155
 Brogan, F. A., J86-170
 Brooks, T. F., J86-039, J86-218
 Brophy, J. R., J86-003, J86-044, J86-270
 Brun, R., J86-220
 Brunelle, E. J., J86-021, J86-079
 Buchlin, J. M., J86-308
 Buffum, D., J86-043
 Bui, M. N., J86-032
 Buratynski, E. K., J86-006
 Burgdorf, O., Jr., J86-183
 Butler, G. W., J86-327
 Bywater, R. J., J86-351
 Cai, R., J86-182
 Campbell, C. W., J86-009
 Carter, J. E., J86-135, J86-145
 Catalano, G. D., J85-288
 Caughey, D. A., J86-006, J86-128, J86-175
 Cebeci, T., J86-032, J86-061
 Chakravarthy, S. R., J86-066, J86-130
 Chambers, F. W., J86-359
 Chang, J. L. C., J86-066
 Chang, K. C., J86-032, J86-061
 Chapman, G. T., J86-322
 Chaudhuri, R. A., J86-332
 Chen, C., J86-027, J86-147, J86-216
 Chen, C. P., J86-309
 Chen, D. Y., J86-036
 Chen, F., J86-264
 Chen, J., J86-091
 Chen, J. C., J86-215
 Chen, J. L., J86-169
 Chen, S., J86-179
 Chen, W., J86-057, J86-248
 Cheng, W. K., J86-119
 Cheng, Y. P., J86-341
 Chong, K. P., J86-091
 Chou, S.-T., J86-241
 Chou, T., J86-112
 Chow, C., J86-216
 Chung, T. J., J86-285
 Clarke, D. K., J86-060
 Cleaver, J. W., J86-027, J86-147
 Cohen, G. A., J84-076
 Coleman, H. W., J86-278
 Corke, T. C., J86-064
 Craig, J. E., J86-011
 Craig, J. L., J86-341
 Crawley, E. F., J86-022
 Creed, M. J., J85-104
 Crews, J. H., Jr., J86-234
 Curtiss, H. C., Jr., J86-095
 Cusworth, R. A., J86-047
 Dadone, A., J86-069, J86-224
 Danberg, J. E., J86-317
 Dash, R., J86-133, J86-160
 Dash, S. M., J86-219
 Davis, D. O., J86-269
 Davis, R. L., J86-145
 Davis, R. T., J86-354
 de Bont, R. T. M., J86-055
 De Vis, D., J86-236
 Deiwert, G. S., J86-161
 Demetriades, A., J86-028
 Deshpande, S. M., J86-194
 DeWitt, D. P., J86-050
 Dibble, R. W., J86-158
 Dickson, J. N., J84-076
 Dimotakis, P. E., J86-155, J86-323
 Dinyavari, M. A. H., J86-255
 Disimile, P. J., J86-289
 Dolling, D. S., J86-137
 Dowell, E. H., J86-235
 Drake, M. C., J86-140, J86-157
 Driscoll, J. F., J86-148
 Driscoll, R. J., J86-193
 Drummond, J. P., J86-262
 Dulikravich, G. S., J86-185
 Duncan, J. H., J86-267
 Dutton, J. C., J86-213
 Dwyer, D. L., J86-001, J86-002
 Eastep, F. E., J86-237
 Ebert, F., J85-288
 Ecer, A., J86-097
 Edwards, D. E., J86-135
 Eidelman, S., J86-089
 Elbanna, H., J86-118
 Epstein, A. H., J86-325
 Ersoy, S., J86-286
 Eversman, W., J86-132
 Fabunmi, J. A., J86-084
 Faeth, G. M., J86-014
 Falcovitz, J., J86-245
 Fang, T., J86-056, J86-090, J86-150, J86-181
 Farassat, F., J86-099
 Feiereisen, W. J., J86-292
 Flax, A. H., J85-295
 Fleeter, S., J86-043
 Fletcher, L. S., J86-085
 Flores, J., J86-257
 Fong, J., J86-146
 Forde, M., J86-207
 Foss, J. F., J86-258
 Friedmann, P. P., J86-255, J86-347
 Fuh, J., J85-252, J86-179
 Fuller, C. R., J86-162, J86-184, J86-223
 Gad-el-Hak, M., J86-127
 Galmes, J. M., J84-295
 Garba, J., J86-215
 George, A. R., J86-241
 Gertz, J. B., J86-325
 Gessner, F. B., J86-269
 Ghajar, A. J., J86-365
 Ghoniem, A. F., J86-036
 Ghosh, K., J86-211
 Glass, I. I., J86-103
 Glumb, R. J., J86-231, J86-294
 Goel, P., J86-177
 Gökoglu, S. A., J86-025
 Goldberg, U. C., J86-306
 Gollahalli, S. R., J86-196
 Goodman, W. L., J86-276
 Goonetilleke, R. S., J86-188
 Gorman, D. J., J86-298
 Goss, L. P., J86-199
 Gouesbet, G., J86-230
 Gouldin, F. C., J86-195
 Graham, G. M., J86-114
 Grandhi, R. V., J86-110
 Graves, C. B., J86-360
 Gray, W. K., J86-137
 Greenhalgh, S., J86-095
 Greitzer, E. M., J86-013, J86-119
 Gu, W., J86-301
 Guezennec, Y. G., J86-064
 Gundappa, M., J86-059
 Gutmark, E., J86-117
 Haase, W., J86-277
 Habashi, W. G., J85-034
 Hafez, M., J86-100
 Hafez, M. M., J85-034, J86-035, J86-135
 Haftka, R. T., J86-110, J86-141, J86-204
 Hajela, P., J86-202
 Halim, A., J86-100

- Halim, A. A. M., J86-227
 Hallett, W. L. H., J86-214
 Halthore, R. N., J86-195
 Hamerquist, R. D., J86-335
 Hanagud, S., J86-341
 Hanana, M., J86-220
 Hankey, W. L., Jr., J85-104
 Hansen, J. S., J86-363
 Hassan, A. A., J86-129
 Hassan, H. A., J86-001, J86-060, J86-068
 Hathaway, M. D., J86-325
 Hegde, U. G., J86-246, J86-264
 Heppler, G. R., J86-363
 Hinrichsen, R. L., J86-330
 Ho, C., J86-117, J86-127
 Hodge, B. K., J86-278
 Hoffman, J. J., J86-042
 Hokenson, G. J., J86-088, J86-176
 Holmes, R. E., J86-029
 Hong, S. K., J86-062, J86-164
 Horne, W. C., J86-243
 Horowitz, S. J., J86-221
 Horstman, C. C., J86-131
 Horstmann, C. C., J86-256
 Hou, J. W., J86-169
 Houas, J., J86-220
 Hounjet, M. H. L., J86-312
 Hu, T. C. J., J86-103
 Huang, M., J86-216
 Hubbard, J. E., J86-260
 Hussaini, M. Y., J86-262
 Hwang, B. C., J86-244
 Hwu, C., J86-248
 Ibrahim, S. R., J86-083, J86-313
 Igra, O., J86-245
 Ishii, R., J86-122
 Issacson, L. K., J86-149
 Jackson, T. W., J86-075
 Jameson, A., J86-104, J86-316
 Jiang, H., J86-182
 Jiji, L. M., J86-209
 Johansen, J. B., J86-187
 Johnson, D. A., J86-073, J86-240
 Johnson, W., J86-217
 Johnston, S. C., J86-158
 Johnston, W. A., J86-173
 Jones, J. D., J86-223
 Jou, W., J86-275
 Jou, W.-H., J86-163
 Juang, J. N., J86-020
 Kabe, A. M., J85-252
 Kandil, O. A., J86-315
 Kapania, R. K., J86-048
 Karagozian, A. R., J86-072, J86-268
 Katz, J., J86-210
 Kauffman, C. W., J86-326
 Keefer, D., J86-295
 Keen, J. M., J86-002
 Kegelman, J. T., J86-067, J86-355
 Kelly, J. J., J86-162
 Kennon, S. R., J86-185
 Kentzer, C., J86-121
 Kerlick, G. D., J86-269
 Khot, N. S., J86-237
 Kibens, V., J86-222
 Kimmel, R. L., J86-007
 King, L. S., J86-240
 Kishoni, D., J86-307
 Kliafas, Y., J86-174
 Kline, K. A., J86-364
 Knight, C. J., J86-321
 Ko, N. W. M., J86-266
 Kollmann, W., J86-158
 Korkan, K. D., J86-178
 Kotb, M. A., J86-098
 Kotiuga, P. L., J85-034
 Koumoussis, V. K., J86-092
 Kozma, F., J86-311
 Kreis, R. I., J86-068
 Krier, H., J86-231, J86-294
 Krishna Murty, A. V., J86-180
 Krishna Prasad, M. R., J86-369
 Krishnamurthy, L., J85-104
 Krishnan, S., J86-296
 Krothapalli, A., J86-243, J86-308
 Kubendran, L. R., J86-260
 Kuhlman, J. M., J86-192
 Kumar, A., J86-123
 Kunukasseril, V. X., J86-332
 Kuo, T., J86-071
 Kwak, D., J86-066
 Kwok, C. K., J86-108, J86-337
 Lakshminarayana, B., J84-295, J86-139, J86-232, J86-349
 Lam, K. M., J86-266
 Landry, P. B., J86-335
 Lapp, M., J86-157
 Lasek, A., J86-159
 Lee, C. L., J86-142
 Lee, C. S., J86-348
 Lee, F. P., J86-326
 Lee, T. S., J86-024
 Lefort, E., J86-230
 Lekoudis, S. G., J86-188, J86-290
 Lepicovsky, J., J86-004
 Less, D. M., J86-358
 Li, C., J86-061
 Librescu, L., J86-167
 Lien, F., J86-027, J86-147
 Lilley, D. G., J86-075
 Lin, C. Q., J86-086
 Lin, S., J86-108, J86-337
 Lin, S. P., J86-052, J86-322
 Liscinsky, D. S., J86-280
 Liu, C. H., J86-226
 Liu, T. C., J86-148
 Lottati, I., J85-295
 Loughlin, K. F., J86-208
 Lourenco, L., J86-308
 Lu, F. K., J85-179
 Luc, A. M., J86-015
 Luchini, P., J86-143
 Lund, T. S., J86-356
 Lust, R. V., J86-297
 Macaraeg, M. G., J86-265
 Mace, J., J85-034
 Mace, J. L., J86-101
 Madhusudana, C. V., J86-085
 Maeda, H., J86-122
 Maestrello, L., J86-189, J86-284
 Maeyer-Piening, H. R., J86-272
 Magi, V., J86-224
 Manela, J., J86-010, J86-070
 Mankbadi, R. R., J86-225, J86-353
 Marcolini, M. A., J86-039, J86-218
 Mattingly, J. D., J86-136
 Mavriplis, D., J86-104
 Mazumder, J., J86-294
 McAninch, G. L., J86-040
 McCroskey, W. J., J86-283
 McDonough, J. M., J86-351
 McKenzie, T. M., J86-131
 McMahon, H. M., J86-260
 McMurtry, P. A., J86-163
 Mehta, R. C., J86-058, J86-212
 Mei, C., J86-109
 Mei, R. W., J86-191
 Mekala, D., J86-322
 Mele, P., J86-159
 Merz, R. A., J86-366
 Messiter, A. F., J85-034
 Metcalfe, R. W., J86-163, J86-267
 Meyyappa, M., J86-341
 Molen, G. M., J86-192
 Mongia, H. C., J86-156
 Moon, Y. J., J86-303
 Moorthy, C. S., J86-279
 Morganti, M., J86-159
 Morino, L., J86-087
 Moustapha, S. H., J86-271
 Mróz, Z., J86-204
 Mueller, T. J., J86-067
 Mukunda, H. S., J86-194
 Murio, D. A., J86-026
 Murman, E. M., J86-368
 Murthy, K. N. S., J86-139
 Murthy, S. N. B., J86-062, J86-164
 Murthy, V. R., J86-339
 Myers, V. H., J86-050
 Naik, R. A., J86-234
 Nakahashi, K., J86-161
 Nakao, S., J86-165
 Nakayama, A., J86-037
 Napolitano, M., J86-069, J86-134, J86-367
 Nath, G., J86-338
 Nayfeh, A. H., J86-034
 Nefski, D. J., J86-171
 Nemeth, M. P., J86-329
 Newsome, R. W., J86-096
 Nicholls, J. A., J86-148
 Nicholson, J. W., J86-081
 Nicolls, J. A., J86-326
 Noor, A. K., J86-049, J86-274
 Noorani, R. I., J86-029
 Nosseir, N. S., J86-318
 Oates, G. C., J86-053, J86-136
 Ochoa, O. O., J86-311
 Ono, A., J86-050
 Oppenheim, A. K., J86-036
 Palazotto, A. N., J86-330
 Panayotounakos, D. E., J86-080
 Paramasivam, T., J86-293
 Parikh, P., J86-189
 Park, M., J86-175
 Parrett, A. V., J86-132
 Patel, R. S., J86-340
 Patel, V., J86-148
 Patnaik, S. N., J86-018
 Paul, D. B., J86-109
 Pelletier, D. H., J86-253
 Peplinski, D. R., J86-113
 Periasamy, C., J86-296
 Peters, C., J86-295
 Peters, J. M., J86-049, J86-274
 Petrie, H. L., J86-041, J86-357
 Pilkey, W. D., J86-166
 Pitz, R. W., J86-140, J86-157
 Plotkin, A., J86-191, J86-205, J86-254
 Poling, D. R., J86-031
 Poon, C. C., J86-011
 Pope, D. S., J86-218
 Popovski, P., J86-232
 Porteiro, J. L. F., J86-302
 Pratt, D. T., J86-327
 Przirembel, C. E. G., J86-366
 Pulliam, T. H., J86-126, J86-352
 Purcell, C. J., J86-115
 Radwan, S. F., J86-290
 Rai, M. M., J86-130
 Raj, S. A., J86-259
 Raju, K. K., J86-342
 Raju, M. S., J85-104
 Rao, G. Venkateswara, J86-342
 Rao, K. M., J86-272
 Rapagnani, N. L., J86-319
 Reddy, K. P. J., J86-369
 Reddy, N. M., J86-369
 Reed, H. L., J86-034, J86-065
 Reeves, C. M., J86-199
 Reismann, H., J86-293
 Reiss, R., J86-201
 Reynolds, G. A., J86-033
 Reynolds, R. S., J86-156
 Richarz, W. G., J86-144

- Riethmuller, M. L., J86-308
 Riley, J. J., J86-163, J86-267
 Rish, J. W., III, J86-371
 Rizk, M. H., J86-275
 Rizzetta, D. P., J86-038
 Rizzi, A., J86-115
 Rockstroh, T. J., J86-294
 Romeo, G., J86-328
 Roos, F. W., J86-355
 Roquemore, W. M., J86-199
 Rosner, D. E., J86-025
 Roth, P., J86-190
 Roux, J. A., J86-371
 Rubel, A., J86-107
 Rutland, C. J., J86-267
 Sabbagh, J. A., J86-118
 Sahu, J., J86-317
 Salas, M. D., J86-060, J86-186
 Sallam, S. N., J86-017
 Samimy, M., J86-041, J86-350, J86-357
 Sanbongi, S., J86-019
 Sankar, B. V., J86-078
 Sanz, A., J86-239
 Saric, W. S., J86-033, J86-065
 Sas, P., J86-236
 Sathiamoorthy, M., J86-300
 Sato, J., J86-076
 Saunders, D. A., J86-128
 Savas, O., J86-196
 Saxena, S. K., J86-212
 Schall, W. O., J86-054
 Scheelke, B., J86-106
 Schefer, R. W., J86-158
 Schetz, J. A., J86-098, J86-253, J86-358
 Schmidt, T. P., J86-258
 Schmit, L. A., J86-297
 Schöffel, S. U., J85-288
 Schofield, W. H., J86-288
 Schöyer, H. F. R., J86-055
 Scibilia, M. F., J86-159
 Scott, J. N., J85-104
 Sedin, Y. C.-J., J86-074
 Seginer, A., J86-010, J86-070
 Settles, G. S., J85-179, J86-007, J86-131, J86-229
 Shahidi, B. K., J86-148
 Shang, J. S., J86-038, J86-102
 Shanks, S. P., J86-066
 Sharf, I., J86-363
 Sheen, J. S., J86-169
 Shen, S. F., J86-086
 Shih, C., J86-215
 Shin, H. W., J86-119
 Shuart, M. J., J86-016
 Shuen, J.-S., J86-014
 Sichel, M., J86-326
 Sigman, R. K., J86-221
 Simitzes, G. J., J86-017, J86-331
 Simons, G. A., J86-334
 Singh, P., J86-259
 Sinha, A., J86-324
 Sinha, N., J86-219
 Sinharay, G. C., J86-168
 Sirovich, L., J86-146
 Sislian, J. P., J86-047
 Skifstad, J. G., J86-360
 Smith, A. C., J86-307
 Smith, C. R., J86-187, J86-242
 Snoeys, R., J86-236
 So, R. M. C., J86-244
 Sockol, P. M., J86-173
 Sohn, J. L., J86-285
 Solomon, A. S. P., J86-014
 Sørensen, H., J86-074
 Soucy, Y., J86-111
 South, J. C., Jr., J86-002
 Spalding, D. B., J86-154
 Srinivasan, G. R., J86-283
 Srinivasan, R., J86-156
 Stehlin, P., J86-170
 Stein, M., J86-273
 Strahle, W. C., J86-188
 Strazisar, A. J., J86-325
 Strickland, J. H., J86-114
 Stubstad, J. M., J86-331
 Stutrud, J. S., J86-199
 Sun, C. T., J86-020, J86-078
 Sung, S. H., J86-171
 Surampudi, S. P., J86-046
 Suzuki, S., J86-247
 Swearingen, J. D., J86-304
 Switzer, G. L., J86-199
 Syed, S. A., J86-071
 Tai, T. C., J86-063
 Takayama, K., J86-116
 Tamigniaux, T. L. B., J86-053
 Tan, C. H., J86-205
 Tan, C. S., J86-013, J86-119
 Taneda, H., J86-076
 Tang, D. M., J86-235
 Tang, Y. L., J86-360
 Tauber, M. E., J86-128, J86-370
 Tavantzis, J., J86-226
 Taylor, R. P., J86-278
 Telionis, D. P., J86-031
 Thames, F. C., J86-068
 Theocaris, P. S., J86-080
 Thielen, K., J86-190
 Thomas, J. L., J86-186, J86-261
 Thomas, J. R., Jr., J86-059
 Thomas, L. C., J86-208
 Thurston, G. A., J86-170
 Ting, L., J86-226
 Tobak, M., J86-052, J86-322
 Toda, S., J86-019
 Tong, K., J86-335
 Trevino, G., J86-009
 Troutt, T. R., J86-106
 Trump, D. D., J86-199
 Tsai, P., J86-057
 Tsitouras, C. D., J86-209
 Turkel, E., J86-189
 Umeda, Y., J86-122
 Van Leer, B., J86-261
 van Niekerk, B., J86-082, J86-206
 Vanka, S. P., J86-077
 Vasantha, R., J86-338
 Vatisas, G. H., J86-108, J86-337
 Venkatesan, C., J86-347
 Venkayya, V. B., J86-237
 Vigneron, F. R., J86-111
 Vinson, J. R., J86-299
 Visbal, M. R., J86-102
 von Lavante, E., J86-178
 Vranos, A., J86-280
 Walker, J. D. A., J86-286
 Walters, R. W., J86-001, J86-134
 Wang, B. P., J86-166
 Wang, C. M., J86-228
 Wang, C. Y., J86-362
 Wang, H., J86-112
 Wang, J. T., J84-076
 Wang, S., J85-179
 Wang, Z., J86-056, J86-090, J86-150, J86-181
 Watson, L. T., J86-110
 Wehrle, V. A., J86-291
 Weihs, D., J86-210
 Weill, M. E., J86-230
 Welle, R., J86-295
 Westbrook, C. K., J86-361
 Whitelaw, J. H., J86-032, J86-061, J86-174
 Whitney, J. M., J86-200
 Wijesundera, N. E., J86-024
 Wilbur, P. J., J86-003, J86-044, J86-270
 Willhite, P. G., J86-097
 Williams, F. A., J86-153
 Williams, F. W., J86-023
 Williams, J. G., J86-016
 Williamson, R. G., J86-271
 Wlezien, R. W., J86-222
 Wolf, D. E., J86-219
 Wolfshtein, M., J86-287
 Wong, G. S., J86-335
 Wornom, S. F., J86-035
 Wortman, A., J85-162
 Wu, J. C., J86-228
 Yang, H. T., J86-305
 Yang, R. J., J86-172
 Yang, T. Y., J86-048, J86-233
 Yates, E. C., Jr., J86-315
 Yeh, D. T., J86-254
 Yeo, K. S., J86-024
 Yi, C. H., J86-366
 Yin, W., J86-017
 Yitzhak, E., J86-310
 Yoon, S., J86-316
 Yu, J. C., J86-263
 Zaki, S. S., J86-225
 Zang, T. A., J86-262
 Zeierman, S., J86-287
 Zinn, B. T., J86-221, J86-246, J86-264
 Zumpano, F. R., J86-319

Chronological Index

J84-076 Buckling of Composite Plates with a Free Edge in Edgewise Bending and Compression. James Ting-Shun Wang, *Georgia Institute of Technology*; Sherrill B. Biggers and John N. Dickson, *Lockheed-Georgia Company* (22, 3, p. 394) Article

Technical Comment by Gerald A. Cohen, *Structures Research Associates* (24, 8, p. 1405)

J84-295 Turbulence Modeling for Three-Dimensional Shear Flows over Curved Rotating Bodies. J. M. Galmes and B. Lakshminarayana, *The Pennsylvania State University* (22, 10, p. 1420) Article based on AIAA Paper 83-0559

Errata (24, 1, p. 192)

J85-034 Computation of Choked and Supersonic Turbomachinery Flows by a Modified Potential Method. W. G. Habashi, *Concordia University (Canada)*; M. M. Hafez, *Computer Dynamics Inc.*; and P. L. Kotiuga, *Pratt & Whitney Canada Inc.* (23, 2, p. 214) Article based on AIAA Paper 83-1404

Technical Comment by T. C. Adamson Jr., J. Mace and A. F. Messiter, *The University of Michigan* (24, 9, p. 1566) Reply (24, 9, p. 1566)

J85-104 Numerical Simulation of Cold Flow in an Axisymmetric Centerbody Combustor. J. N. Scott, *University of Dayton Research Institute*; and W. L. Hankey Jr., *Air Force Wright Aeronautical Laboratories* (23, 5, p. 641) Article based on AIAA Paper 83-1741

Technical Comment by M. S. Raju, M. J. Creed and L. Krishnamurthy, *University of Dayton Research Institute* (24, 4, p. 698)

Reply (24, 4, p. 700)

J85-162 Improved Series Solutions of Falkner-Skan Equation. Noor Afzal, *Aligarh Muslim University* (23, 6, p. 969) Technical Note

Technical Comment by A. Wortman, *ISTAR Inc.* (24, 5, p. 863)

Reply (24, 5, p. 863)

J85-179 Conical Similarity of Shock/Boundary-Layer Interactions Generated by Swept and Unswept Fins. Gary S. Settles and Frank K. Lu, *Pennsylvania State University* (23, 7, p. 1021) Article based on AIAA Paper 83-1756

Technical Comment by Seymour M. Bogdonoff, *Princeton University*; and Shuyi Wang, *Chinese Aerodynamic R&D Center* (24, 3, p. 540)

Reply (24, 3, p. 541)

J85-252 Stiffness Matrix Adjustment Using Mode Data. Alvar M. Kabe, *The Aerospace Corporation* (23, 9, p. 1431) Article

Technical Comment by Jon-Shen Fuh and Alex Berman, *Kaman Aerospace Corporation* (24, 8, p. 1405)

J85-288 A Prediction of Particle Behavior via the Basset-Boussinesq-Oseen Equation. G. D. Catalano, *Louisiana State University* (23, 10, p. 1627) Technical Note

Technical Comment by F. Ebert and S. U. Schöffel, *University of Kaiserslautern, Federal Republic of Germany* (24, 8, p. 1403)

Reply (24, 8, p. 1404)

J85-295 The Role of Damping on Supersonic Panel Flutter. I. Lottati, *Technion - Israel Institute of Technology* (23, 10, p. 1641) Technical Note

Technical Comment by Alexander H. Flax, *National Academy of Engineering* (24, 11, p. 1886)

Reply (24, 11, p. 1887)

J86-001 A Strongly Implicit Procedure for the Compressible Navier-Stokes Equations. Robert W. Walters, *North Carolina State University*; Douglas L. Dwyer, *NASA Langley Research Center*; and H. A. Hassan, *North Carolina State University* (24, 1, p. 6) Article based on AIAA Paper 84-0424

J86-002 Vectorized Schemes for Conical Potential Flow Using the Artificial Density Method. Pamela F. Bradley, Douglas L. Dwyer and Jerry C. South Jr., *NASA Langley Research Center*; and Joseph M. Keen, *Virginia Polytechnic Institute and State University* (24, 1, p. 13) Article based on AIAA Paper 84-0162

J86-003 An Experimental Investigation of Cusped Magnetic Field Discharge Chambers. John R. Brophy and Paul J. Wilbur, *Colorado State University* (24, 1, p. 21) Article

J86-004 Laser Velocimeter Measurements of Large-Scale Structures in a Tone-Excited Jet. J. Lepicovsky, *Lockheed-Georgia Company* (24, 1, p. 27) Article based on AIAA Paper 84-1603

J86-005 Time-Dependent Wave Envelope Finite Difference Analysis of Sound Propagation. Kenneth J. Baumeister, *NASA Lewis Research Center* (24, 1, p. 32) Article based on AIAA Paper 84-2285

J86-006 An Implicit LU Scheme for the Euler Equations Applied to Arbitrary Cascades. Edward K. Buratynski and David A. Caughey, *Cornell University* (24, 1, p. 39) Article based on AIAA Paper 84-0167

J86-007 Similarity of Quasiconical Shock Wave/Turbulent Boundary-Layer Interactions. Gary S. Settles, *Pennsylvania State University*; and Roger L. Kimmel, *Princeton University* (24, 1, p. 47) Article based on AIAA Paper 84-1557

J86-008 Structure of Self-Excited Oscillations in Transonic Diffuser Flows. T. J. Bogar, *McDonnell Douglas Corporation* (24, 1, p. 54) Article based on AIAA Paper 84-1636

J86-009 Monte Carlo Turbulence Simulation Using Rational Approximations to von Kármán Spectra. C. Warren Campbell, *NASA Marshall Space Flight Center* (24, 1, p. 62) Article

Technical Comment by George Trevino, *Michigan Technological University* (24, 11, p. 1885)

Reply (24, 11, p. 1885)

J86-010 Jet Penetration Height in Transonic Flow. Jonah Manela, *Armaments Development Authority (Israel)*; and Arnan Seginer, *Technion-Israel Institute of Technology* (24, 1, p. 67) Article based on AIAA Paper 83-1680

J86-011 Resonant Holographic Detection of Hydroxyl Radicals in Reacting Flows. J. E. Craig and M. Azzazy, *Spectron Development Laboratory*; and C. C. Poon, *IBM Corporation* (24, 1, p. 74) Article based on AIAA Paper 84-0202

J86-012 The Deflagration-to-Detonation Transition Process for High-Energy Propellants--A Review. Richard R. Bernecker, *Naval Surface Weapons Center* (24, 1, p. 82) Survey Paper

J86-013 Nonaxisymmetric Compressible Swirling Flow in Turbomachine Annuli. C. S. Tan and E. M. Greitzer, *Massachusetts Institute of Technology* (24, 1, p. 92) Article

- J86-014 Drop-Turbulence Interactions in a Diffusion Flame.** J.-S. Shuen, A. S. P. Solomon and G. M. Faeth, *The Pennsylvania State University* (24, 1, p. 101) Article based on AIAA Paper 85-0319
- J86-015 Transient Thermal Behavior of Directional Reinforced Composites: Applicability Limits of Homogeneous Property Model.** D. L. Balageas, *Office National d'Etudes et Recherches Aeronautiques*; and A. M. Luc, *Office National d'Etudes et Recherches Aeronautiques* (24, 1, p. 109) Article based on AIAA Paper 83-1471
- J86-016 Compression Behavior of $\pm 45^\circ$ -Dominated Laminates with a Circular Hole or Impact Damage.** Mark J. Shuart and Jerry G. Williams, *NASA Langley Research Center* (24, 1, p. 115) Article based on AIAA Paper 84-0848 CP844.
- J86-017 Ultimate Axial Load Capacity of a Delaminated Beam-Plate.** Wan-Lee Yin, Sayed N. Sallam and George J. Simitses, *Georgia Institute of Technology* (24, 1, p. 123) Article based on AIAA Paper 84-0892 CP844
- J86-018 The Variational Energy Formulation for the Integrated Force Method.** S. N. Patnaik, *Vikram Sarabhai Space Center, India* (24, 1, p. 129) Article
- J86-019 Buckling of Quasisinusoidally Corrugated Plates in Shear.** Susumu Toda, *National Aerospace Laboratory (Japan)*; and Shigeo Sanbongi, *National Space Development Agency of Japan* (24, 1, p. 138) Article
- J86-020 Modeling Global Structural Damping in Trusses Using Simple Continuum Models.** C. T. Sun, *Purdue University*; and J. N. Juang, *NASA Langley Research Center* (24, 1, p. 144) Article
- J86-021 Eigenvalue Similarity Rules for Symmetric Cross-Ply Laminated Plates.** E. J. Brunelle, *U. S. Air Force Institute of Technology* (24, 1, p. 151) Article
- J86-022 Identification of Nonlinear Structural Elements by Force-State Mapping.** Edward F. Crawley, *Massachusetts Institute of Technology*; and Allan C. Aubert, *Cambridge Collaborative, Inc.* (24, 1, p. 155) Article based on AIAA Paper 84-0992 CP844
- J86-023 Natural Vibration and Buckling of General Periodic Lattice Structures.** M. S. Anderson, *NASA Langley Research Center*; and F. W. Williams, *University of Wales Institute of Science and Technology* (24, 1, p. 163) Article based on AIAA Paper 84-0979 CP844
- J86-024 Convection in Eccentric Annuli with Inner Cylinder Rotation.** T. S. Lee, N. E. Wijesundera and K. S. Yeo, *National University of Singapore* (24, 1, p. 170) Synoptic
- J86-025 Thermophoretically Augmented Mass Transfer Rates to Solid Walls Across Laminar Boundary Layers.** Süleyman A. Gökoglu and Daniel E. Rosner, *Yale University* (24, 1, p. 172) Article
- J86-026 Combined Function Specification-Regularization Procedure for Solution of Inverse Heat Conduction Problem.** James V. Beck, *Michigan State University*; and Diego A. Murio, *University of Cincinnati* (24, 1, p. 180) Article
- J86-027 Heat Transfer Due to Axial Turbulent Flow Along a Circular Rod.** Fue-Sang Lien and Cha'o-Kuang Chen, *National Cheng Kung University, China*; and J. W. Cleaver, *University of Liverpool* (24, 1, p. 186) Technical Note
- J86-028 Pressure Fluctuations on Hypersonic Vehicles Due to Boundary-Layer Instabilities.** A. Demetriades, *Montana State University* (24, 1, p. 188) Technical Note
- J86-029 Effects of Electric Fields on the Flame Propagation Velocity of Methane-Air Flame.** R. I. Noorani, *The University of Southwestern Louisiana*; and R. E. Holmes, *Texas A&M University* (24, 1, p. 190) Technical Note
- J86-031 The Response of Airfoils to Periodic Disturbances--The Unsteady Kutta Condition.** D. R. Poling and D. P. Telionis, *Virginia Polytechnic Institute and State University* (24, 2, p. 193) Article based on AIAA Paper 84-0050
- J86-032 The Calculation of Turbulent Wakes.** K. C. Chang, M. N. Bui, T. Cebeci and J. H. Whitelaw, *California State University* (24, 2, p. 200) Synoptic
- J86-033 Experiments on the Stability of the Flat-Plate Boundary Layer with Suction.** G. A. Reynolds and W. S. Saric, *Virginia Polytechnic Institute and State University* (24, 2, p. 202) Article based on AIAA Paper 82-1026
- J86-034 Numerical-Perturbation Technique for Stability of Flat-Plate Boundary Layers with Suction.** H. L. Reed and A. H. Nayfeh, *Virginia Polytechnic Institute and State University* (24, 2, p. 208) Article
- J86-035 Implicit Conservative Schemes for the Euler Equations.** Stephen F. Wornom, *NASA Langley Research Center*; and Mahamed M. Hafez, *University of California, Davis* (24, 2, p. 215) Article based on AIAA Paper 83-1939 CP834
- J86-036 Formation and Inflammation of a Turbulent Jet.** A. F. Ghoniem, *Massachusetts Institute of Technology*; D. Y. Chen, *Allison Gas Turbine Operations*; and A. K. Oppenheim, *University of California, Berkeley* (24, 2, p. 224) Article based on AIAA Paper 84-0572
- J86-037 Subcooled Forced-Convection Film Boiling in the Presence of a Pressure Gradient.** Akira Nakayama, *Shizuoka University, Japan* (24, 2, p. 230) Article
- J86-038 Numerical Simulation of Leading-Edge Vortex Flows.** Donald P. Rizzetta and Joseph S. Shang, *Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (24, 2, p. 237) Article based on AIAA Paper 84-1544
- J86-039 Airfoil Tip Vortex Formation Noise.** Thomas F. Brooks and Michael A. Marcolini, *NASA Langley Research Center* (24, 2, p. 246) Article based on AIAA Paper 84-2308
- J86-040 Higher Order Parabolic Approximations for Sound Propagation in Stratified Moving Media.** Gerry L. McAninch, *NASA Langley Research Center* (24, 2, p. 253) Article based on AIAA Paper 84-2356
- J86-041 A Study of Compressible Turbulent Reattaching Free Shear Layers.** M. Samimy, *Ohio State University*; H. L. Petrie, *Pennsylvania State University*; and A. L. Addy, *University of Illinois, Urbana-Champaign* (24, 2, p. 261) Article based on AIAA Paper 85-1646
- J86-042 Aerodynamic Design of Three-Dimensional Subsonic Wind Tunnel Inlets.** Stephen M. Batill and Joseph J. Hoffman, *University of Notre Dame* (24, 2, p. 268) Synoptic based on AIAA Paper 84-0416

- J86-043 Aerodynamic Performance of an Annular Flat Plate Airfoil Cascade with Nonuniform Inlet Velocity.** Daniel Buffum and Sanford Fleeter, *Purdue University* (24, 2, p. 270) Article based on AIAA Paper 84-0619 CP841
- J86-044 The Effect of Discharge Chamber Wall Temperature on Ion Thruster Performance.** Paul J. Wilbur and John R. Brophy, *Colorado State University* (24, 2, p. 278) Article
- J86-045 The Viscous Wall-Layer Effect in Injected Porous Pipe Flow.** Moshe Ben-Reuven, *Princeton Combustion Research Laboratories, Inc.* (24, 2, p. 284) Article based on AIAA Paper 84-0289
- J86-046 Unsteady Transonic Flow over Cascade Blades.** Surya P. Surampudi and John J. Adamczyk, *NASA Lewis Research Center* (24, 2, p. 293) Article
- J86-047 Measurements of Mean Velocity and Turbulent Intensities in a Free Isothermal Swirling Jet.** J. P. Sislian and R. A. Cusworth, *University of Toronto* (24, 2, p. 303) Article
- J86-048 Formulation of an Imperfect Quadrilateral Doubly Curved Shell Element for Postbuckling Analysis.** Rakesh K. Kapania, *Virginia Polytechnic Institute and State University*; and T. Y. Yang, *Purdue University* (24, 2, p. 310) Synoptic
- J86-049 Penalty Finite Element Models for Nonlinear Dynamic Analysis.** Ahmed K. Noor and Jeanne M. Peters, *NASA Langley Research Center* (24, 2, p. 312) Article
- J86-050 A Method for Measuring Optical Properties of Semi-transparent Materials at High Temperatures.** V. H. Myers, A. Ono and D. P. DeWitt, *Purdue University* (24, 2, p. 321) Article based on AIAA Paper 83-1500
- J86-051 Green's Functions and Numbering System for Transient Heat Conduction.** James V. Beck, *Michigan State University* (24, 2, p. 327) Article based on AIAA Paper 84-1741
- J86-052 Reversed Flow Above a Plate with Suction.** S. P. Lin, *Clarkson University*; and Murray Tobak, *NASA Ames Research Center* (24, 2, p. 334) Technical Note
- J86-053 Effect of a Nearby Solid Surface on a Five-Hole Pressure Probe.** Thierry L. B. Tamigniaux and Gordon C. Oates, *University of Washington* (24, 2, p. 335) Technical Note
- J86-054 Cavity Flow Control for Supersonic Lasers.** Wolfgang O. Schall, *DFVLR Institut für Technische Physik, Stuttgart, Federal Republic of Germany* (24, 2, p. 337) Technical Note
- J86-055 Experimental Verification of Temperature Fluctuations During Combustion Instability.** H. F. R. Schöyer, *ESTEC, Noordwijk, The Netherlands*; and R. T. M. de Bont, *Delft University of Technology, The Netherlands* (24, 2, p. 340) Technical Note
- J86-056 Complex Modal Analysis of Random Vibrations.** Tong Fang, *Duke University*; and Zhen-ni Wang, *Northwestern Polytechnical University, China* (24, 2, p. 342) Technical Note
- J86-057 Finite Element Analysis of Elastoplastic Contact Problems with Friction.** Pwu Tsai and Wen-Hwa Chen, *National Tsing Hua University, Taiwan, China* (24, 2, p. 344) Technical Note
- J86-058 Transient Heat-Transfer Analysis of a Conical Cathode of an MPD Arcjet.** R. C. Mehta, *Vikram Sarabhai Space Centre, India* (24, 2, p. 346) Technical Note
- J86-059 Transient Conduction in a Cylinder in an Infinite Conductive Medium with Contact Resistance.** J. R. Thomas Jr. and Mahesh Gundappa, *Virginia Polytechnic Institute and State University* (24, 2, p. 349) Technical Note
- J86-060 Euler Calculations for Multielement Airfoils Using Cartesian Grids.** D. Keith Clarke, *North Carolina State University*; M. D. Salas, *NASA Langley Research Center*; and H. A. Hassan, *North Carolina State University* (24, 3, p. 353) Article based on AIAA Paper 85-0291
- J86-061 Turbulence Models for Wall Boundary Layers.** Tuncer Cebeci, K. C. Chang, C. Li and J. H. Whitelaw, *California State University, Long Beach* (24, 3, p. 359) Synoptic
- J86-062 Effective Velocity of Transport in Curved Wall Boundary Layers.** S. K. Hong and S. N. B. Murthy, *Purdue University* (24, 3, p. 361) Article based on AIAA Paper 84-0177
- J86-063 Application of Two-Dimensional Velocity Profile to Three-Dimensional Boundary-Layer Flow.** Tsze C. Tai, *David Taylor Naval Ship Research and Development Center* (24, 3, p. 370) Article based on AIAA Paper 85-0124
- J86-064 Discrimination of Coherent Features in Turbulent Boundary Layers by the Entropy Method.** T. C. Corke and Y. G. Guezennec, *Illinois Institute of Technology* (24, 3, p. 377) Article based on AIAA Paper 84-0534
- J86-065 Effect of Suction and Weak Mass Injection on Boundary-Layer Transition.** William S. Saric and Helen L. Reed, *Arizona State University* (24, 3, p. 383) Article based on AIAA Paper 83-0043
- J86-066 A Three-Dimensional Incompressible Navier-Stokes Flow Solver Using Primitive Variables.** Dochan Kwak, *NASA Ames Research Center*; James L. C. Chang and Samuel P. Shanks, *Rockwell International*; and Sukumar R. Chakravarthy, *Stanford University* (24, 3, p. 390) Article based on AIAA Paper 84-0253
- J86-067 Experimental Studies of Spontaneous and Forced Transition on an Axisymmetric Body.** J. T. Kegelman and T. J. Mueller, *University of Notre Dame* (24, 3, p. 397) Article based on AIAA Paper 84-0008
- J86-068 Application of a Variational Method for Generating Adaptive Grids.** R. I. Kreis, *North Carolina State University*; F. C. Thames, *NASA Langley Research Center*; and H. A. Hassan, *North Carolina State University* (24, 3, p. 404) Article based on AIAA Paper 85-0487
- J86-069 A Perturbative Lambda Formulation.** A. Dadone and M. Napolitano, *Università di Bari, Italy* (24, 3, p. 411) Article
- J86-070 Interaction of Multiple Supersonic Jets with a Transonic Flowfield.** Jonah Manela, *Armaments Development Authority, Israel*; and Arnan Seginer, *Technion-Israel Institute of Technology* (24, 3, p. 418) Article based on AIAA Paper 83-1680
- J86-071 Scaling of Impulsively Started, Incompressible, Laminar Round Jets and Pipe Flows.** Tang-Wei Kuo, *General Motors Technical Center*; Saadat A. Syed, *United Technologies Corporation*; and Frediano V. Bracco, *Princeton University* (24, 3, p. 424) Article
- J86-072 An Analytical Model for the Vorticity Associated with a Transverse Jet.** A. R. Karagozian, *University of California, Los Angeles* (24, 3, p. 429) Article based on AIAA Paper 84-1662

- J86-073 Transonic, Turbulent Boundary-Layer Separation Generated on an Axisymmetric Flow Model.** W. D. Bachalo, *Aerometrics Inc.*; and D. A. Johnson, *NASA Ames Research Center* (24, 3, p. 437) Article based on AIAA Paper 79-1479
- J86-074 Computed and Measured Wall Interference in a Slotted Transonic Test Section.** Yngve C.-J. Sedin, *Saab-Scania AB, Sweden*; and Hans Sörensen, *FFA, The Aeronautical Research Institute of Sweden* (24, 3, p. 444) Article based on AIAA Paper 84-0243
- J86-075 Accuracy and Directional Sensitivity of the Single-Wire Technique.** T. W. Jackson, *University of Maryland*; and D. G. Lilley, *Oklahoma State University* (24, 3, p. 451) Article based on AIAA Paper 84-0367
- J86-076 Mach Number Control of Ludwig Tubes.** Junzo Sato and Hiroshi Taneda, *University of Tokyo* (24, 3, p. 459) Article
- J86-077 Calculation of Axisymmetric, Turbulent, Confined Diffusion Flames.** S. P. Vanka, *Argonne National Laboratory* (24, 3, p. 462) Article based on AIAA Paper 85-0141
- J86-078 Low-Velocity Impact Damage in Graphite-Epoxy Laminates Subjected to Tensile Initial Stresses.** Bhavani V. Sankar, *Bradley University*; and C. T. Sun, *Purdue University* (24, 3, p. 470) Synoptic
- J86-079 Generic Kármán-Rostovstev Plate Equations in an Affine Space.** E. J. Brunelle, *U.S. Air Force Institute of Technology* (24, 3, p. 472) Article based on AIAA Paper 84-0891 CP844
- J86-080 Nonlinear and Buckling Analysis of Continuous Bars Lying on Rigid Supports.** D. E. Panayotounakos and P. S. Theocaris, *National Technical University of Athens, Greece* (24, 3, p. 479) Article
- J86-081 Free Vibration of Stiffened Rectangular Plates Using Green's Functions and Integral Equations.** J. W. Nicholson, *University of Illinois, Urbana-Champaign* (24, 3, p. 485) Article based on AIAA Paper 85-0651 CP851
- J86-082 Computation of Second-Order Accurate Unsteady Aerodynamic Generalized Forces.** Becker van Niekerk, *Stanford University* (24, 3, p. 492) Article based on AIAA Paper 85-0597 CP851
- J86-083 Double Least Squares Approach for Use in Structural Modal Identification.** Samir R. Ibrahim, *Old Dominion University* (24, 3, p. 499) Article based on AIAA Paper 84-0928 CP844
- J86-084 Effects of Structural Modes on Vibratory Force Determination by the Pseudoinverse Technique.** James A. Fabunmi, *University of Maryland* (24, 3, p. 504) Article based on AIAA Paper 85-0784 CP851
- J86-085 Contact Heat Transfer--The Last Decade.** C. V. Madhusudana, *The University of New South Wales, Australia*; and L. S. Fletcher, *Texas A&M University* (24, 3, p. 510) Survey Paper
- J86-086 Analysis of Transonic Flow with Shock in Slender Hyperbolic Nozzles.** C. Q. Lin and S. F. Shen, *Cornell University* (24, 3, p. 524) Technical Note
- J86-087 Material Contravariant Components: Vorticity Transports and Vortex Theorems.** Luigi Morino, *Boston University* (24, 3, p. 526) Technical Note
- J86-088 Turbulent Boundary Layers with Vecteded Mass Transfer.** Gustave J. Hokenson, *The Hokenson Company* (24, 3, p. 528) Technical Note
- J86-089 Local Cell Orientation Method.** Shmuel Eidelman, *Science Applications International* (24, 3, p. 530) Technical Note
- J86-090 A Generalization of Caughey's Normal Mode Approach to Nonlinear Random Vibration Problems.** Tong Fang, *Duke University*; and Zhen-ni Wang, *Beijing Institute of Aeronautics and Astronautics, China* (24, 3, p. 531) Technical Note
- J86-091 Buckling of Irregular Plates by Splined Finite Strips.** Ken P. Chong and Jui-Lin Chen, *University of Wyoming* (24, 3, p. 534) Technical Note based on AIAA Paper 85-0637 CP851
- J86-092 Vibrations of Infinitely Long Cylindrical Shells of Noncircular Cross Section.** V. K. Koumoussis, *Athens, Greece*; and A. E. Armenakas, *Polytechnic University of New York* (24, 3, p. 536) Technical Note
- J86-095 Aerodynamic Characteristics of a Flexible Membrane Wing.** S. Greenhalgh, *Naval Air Development Center*; and H. C. Curtiss Jr., *Princeton University* (24, 4, p. 545) Article based on AIAA Paper 82-2168
- J86-096 Euler and Navier-Stokes Solutions for Flow over a Conical Delta Wing.** Richard W. Newsome, *NASA Langley Research Center* (24, 4, p. 552) Article based on AIAA Paper 85-0111
- J86-097 Finite Element Solutions of Euler Equations for Lifting Airfoils.** H. U. Akay, A. Ecer and P. G. Willhite, *Purdue University, Indianapolis* (24, 4, p. 562) Article based on AIAA Paper 85-0294
- J86-098 Measurements of Three-Dimensional Turbulent Flow Behind a Propeller in a Shear Flow.** M. A. Kotb and J. A. Schetz, *Virginia Polytechnic Institute and State University* (24, 4, p. 570) Article based on AIAA Paper 84-1676
- J86-099 Prediction of Advanced Propeller Noise in the Time Domain.** F. Farassat, *NASA Langley Research Center* (24, 4, p. 578) Article based on AIAA Paper 84-2303
- J86-100 Calculation of Separation Bubbles Using Boundary-Layer-Type Equations.** A. Halim, *George Washington University*; and M. Hafez, *University of California, Davis* (24, 4, p. 585) Article based on AIAA Paper 84-1585
- J86-101 Shock Waves in Transonic Channel Flows at Moderate Reynolds Numbers.** J. L. Mace, *Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base*; and T. C. Adamson Jr., *University of Michigan* (24, 4, p. 591) Article based on AIAA Paper 85-0369
- J86-102 Comparative Study Between Two Navier-Stokes Algorithms for Transonic Airfoils.** Miguel R. Visbal and Joseph S. Shang, *Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (24, 4, p. 599) Article based on AIAA Paper 85-0480
- J86-103 Blast Wave Reflection Trajectories from a Height of Burst.** T. C. J. Hu and I. I. Glass, *University of Toronto* (24, 4, p. 607) Article
- J86-104 Finite Volume Solution of the Two-Dimensional Euler Equations on a Regular Triangular Mesh.** A. Jameson and D. Mavriplis, *Princeton University* (24, 4, p. 611) Article

- J86-105 Limitations of the Near-Wall $k\epsilon$ Turbulence Model.** Peter S. Bernard, *University of Maryland* (24, 4, p. 619) Article
- J86-106 Modification of Vortex Interactions in a Reattaching Separated Flow.** S. Bhattacharjee, B. Scheelke and T. R. Troutt, *Washington State University* (24, 4, p. 623) Article based on AIAA Paper 85-0555
- J86-107 Axisymmetric Shear Flow over Spheres and Spheroids.** Arthur Rubel, *Grumman Corporation* (24, 4, p. 630) Article based on AIAA Paper 85-1714
- J86-108 Theoretical and Experimental Studies on Vortex Chamber Flows.** G. H. Vattistas, S. Lin and C. K. Kwok, *Concordia University, Canada* (24, 4, p. 635) Article based on AIAA Paper 84-1548
- J86-109 Nonlinear Multimode Response of Clamped Rectangular Plates to Acoustic Loading.** Chuh Mei, *Old Dominion University*; and Donald B. Paul, *Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (24, 4, p. 643) Article based on AIAA Paper 83-1033 CP832
- J86-110 Design-Oriented Identification of Critical Times in Transient Response.** Ramana V. Grandhi, *Wright State University*; Raphael T. Haftka and Layne T. Watson, *Virginia Polytechnic Institute and State University* (24, 4, p. 649) Article based on AIAA Paper 84-0899 CP844
- J86-111 Step Relaxation Method for Modal Test Implemented with Frequency-Domain Preprocessing.** F. R. Vigneron and Y. Soucy, *Communications Research Centre, Canada* (24, 4, p. 657) Article
- J86-112 Transient Thermal Behavior of a Thermally and Elastically Orthotropic Medium.** Hongsheng Wang and Tsu-Wei Chou, *University of Delaware* (24, 4, p. 664) Article
- J86-113 Reaction of High-Velocity Atomic Oxygen with Carbon.** Graham S. Arnold and Daniel R. Peplinski, *The Aerospace Corporation* (24, 4, p. 673) Article based on AIAA Paper 84-0549
- J86-114 Dynamic Stall Inception Correlation for Airfoils Undergoing Constant Pitch Rate Motions.** J. H. Strickland and G. M. Graham, *Texas Tech University* (24, 4, p. 678) Technical Note
- J86-115 Simulation of Inviscid Vortex-Stretched Turbulent Shear-Layer Flow.** Arthur Rizzi, *FFA The Aeronautical Research Institute of Sweden*; and Charles J. Purcell, *ETA Systems, Inc.* (24, 4, p. 680) Technical Note
- J86-116 Application of Steady Shock Polars to Unsteady Shock Wave Reflections.** G. Ben-Dor, *Ben-Gurion University of the Negev, Israel*; and K. Takayama, *Tohoku University, Japan* (24, 4, p. 682) Technical Note
- J86-117 Visualization of a Forced Elliptic Jet.** Ephraim Gutmark and Chih-Ming Ho, *University of Southern California* (24, 4, p. 684) Technical Note
- J86-118 Interaction of Two Nonequal Jets.** H. Elbanna and J. A. Sabbagh, *King Abdulaziz University, Saudi Arabia* (24, 4, p. 686) Technical Note
- J86-119 Inlet Vortex Formulation due to Ambient Vorticity Intensification.** H. W. Shin, W. K. Cheng, E. M. Greitzer and C. S. Tan, *Massachusetts Institute of Technology* (24, 4, p. 687) Technical Note
- J86-120 Turbulent Boundary-Layer Wall Pressure Fluctuations Downstream of a Tandem LEBU.** George B. Beeler, *NASA Langley Research Center* (24, 4, p. 689) Technical Note
- J86-121 Quasilinear Form of Rankine-Hugoniot Jump Conditions.** Czeslaw Kentzer, *Purdue University* (24, 4, p. 691) Technical Note
- J86-122 Frequency Characteristics of Discrete Tones Generated in a High Subsonic Jet.** Y. Umeda, H. Maeda and R. Ishii, *Kyoto University, Japan* (24, 4, p. 693) Technical Note
- J86-123 Mach Reflection and Aerodynamic Choking in Two-Dimensional Ducted Flow.** Ajay Kumar, *NASA Langley Research Center* (24, 4, p. 695) Technical Note
- J86-126 Airfoil Computation at High Angles of Attack, Inviscid and Viscous Phenomena.** John T. Barton and Thomas H. Pulliam, *NASA Ames Research Center* (24, 5, p. 705) Article based on AIAA Paper 84-0524
- J86-127 Unsteady Vortical Flow Around Three-Dimensional Lifting Surfaces.** Mohamed Gad-el-Hak and Chih-Ming Ho, *Flow Research Company* (24, 5, p. 713) Article based on AIAA Paper 85-0041
- J86-128 Computation of Transonic Flow About Helicopter Rotor Blades.** Rimón Arieli and Michael E. Tauber, *NASA Ames Research Center*; David A. Saunders, *Informatics General Corporation*; and David A. Caughey, *Cornell University* (24, 5, p. 722) Article
- J86-129 A Method for the Design of Shock-Free Slender Bodies of Revolution.** A. A. Hassan, *Arizona State University* (24, 5, p. 728) Article
- J86-130 An Implicit Form for the Osher Upwind Scheme.** Man Mohan Rai, *NASA Ames Research Center*; and Sukumar R. Chakavarthy, *Rockwell International Science Center* (24, 5, p. 735) Article based on AIAA Paper 84-0088
- J86-131 Experimental and Computational Study of a Swept Compression Corner Interaction Flowfield.** G. S. Settles, *Pennsylvania State University*; C. C. Horstman, *NASA Ames Research Center*; and T. M. McKenzie, *Princeton University* (24, 5, p. 744) Article based on AIAA Paper 84-0096
- J86-132 Wave Envelope and Finite Element Approximations for Turbofan Noise Radiation in Flight.** A. V. Parrett, *General Motors Proving Ground*; and W. Eversman, *University of Missouri-Rolla* (24, 5, p. 753) Article based on AIAA Paper 84-2333
- J86-133 Flight Effects on Noise from Coaxial Dual Flow Part I: Unheated Jets.** R. Dash, *NASA Ames Research Center* (24, 5, p. 761) Article
- J86-134 An Incremental Block-Line-Gauss-Seidel Method for the Navier-Stokes Equations.** M. Napolitano, *Università di Bari, Italy*; and R. W. Walters, *NASA Langley Research Center* (24, 5, p. 770) Article based on AIAA Paper 85-0033
- J86-135 Viscous/Inviscid Analysis of Transonic Shock-Induced Separation Including Normal Pressure Gradients.** D. E. Edwards and J. E. Carter, *United Technologies Research Center*; and M. M. Hafez, *Computer Dynamics, Inc.* (24, 5, p. 777) Article based on AIAA Paper 85-0371
- J86-136 An Experimental Investigation of the Mixing of Coannular Swirling Flows.** Jack D. Mattingly and Gordon C. Oates, *University of Washington* (24, 5, p. 785) Article based on AIAA Paper 85-0186

- J86-137 Experimental Study of Supersonic Turbulent Flow on a Blunted Axisymmetric Body.** D. S. Dolling and W. K. Gray, *University of Texas, Austin* (24, 5, p. 793) Article
- J86-138 Navier-Stokes Analysis of Muzzle-Blast-Type Waves.** O. Baysal, *Old Dominion University* (24, 5, p. 800) Article
- J86-139 Laser Doppler Velocimeter Measurement in the Tip Region of a Compressor Rotor.** K. N. S. Murthy and B. Lakshminarayana, *The Pennsylvania State University* (24, 5, p. 807) Article based on AIAA Paper 84-1602
- J86-140 Intermittency and Conditional Averaging in a Turbulent Nonpremixed Flame by Raman Scattering.** R. W. Pitz and M. C. Drake, *General Electric Company* (24, 5, p. 815) Article based on AIAA Paper 84-0197
- J86-141 Sensitivity Analysis of Discrete Structural Systems.** Howard M. Adelman, *NASA Langley Research Center*; and Raphael T. Haftka, *Virginia Polytechnic Institute and State University* (24, 5, p. 823) Survey Paper
- J86-142 An Iterative Procedure for Nonlinear Flutter Analysis.** Craig L. Lee, *Texas Instruments Incorporated* (24, 5, p. 833) Article based on AIAA Paper 85-0688 CP851
- J86-143 Analytical and Numerical Solutions for Natural Convection in a Corner.** Paolo Luchini, *University of Naples* (24, 5, p. 841) Article
- J86-144 Fine Structure of Subsonic Jet Noise.** W. G. Richarz, *Carleton University, Canada* (24, 5, p. 849) Technical Note
- J86-145 Counterrotating Streamline Pattern in a Transitional Separation Bubble.** R. L. Davis and J. E. Carter, *United Technologies Research Center* (24, 5, p. 850) Technical Note based on AIAA Paper 84-1613
- J86-146 Direct and Inverse Problem in Supersonic Axisymmetric Flow.** Jefferson Fong and Lawrence Sirovich, *Brown University* (24, 5, p. 852) Technical Note
- J86-147 Forced Convection over Rotating Bodies with Blowing and Suction.** Fue-Sang Lien and Cha'o-Kuang Chen, *National Cheng Kung University, China*; and John W. Cleaver, *University of Liverpool, England* (24, 5, p. 854) Technical Note
- J86-148 Aluminum Combustion at 40 Atmospheres Using a Reflected Shock Wave.** J. F. Driscoll, J. A. Nicholls, V. Patel, B. K. Shahidi and T. C. Liu, *University of Michigan* (24, 5, p. 856) Technical Note based on AIAA Paper 84-1201
- J86-149 Spiral Vortices and Liquid Breakup.** L. K. Issacson, *University of Utah* (24, 5, p. 858) Technical Note
- J86-150 Mean Square Response to Band-Limited White Noise Excitation.** Tong Fang, *Duke University*; and Zhen-ni Wang, *Beijing Institute of Aeronautics and Astronautics, China* (24, 5, p. 860) Technical Note
- J86-151 Asymptotic Methods in Turbulent Combustion.** F. A. Williams, *Princeton University* (24, 6, p. 867) Survey Paper based on AIAA Paper 84-0475
- J86-154 The Two-Fluid Model of Turbulence Applied to Combustion Phenomena.** D. Brian Spalding, *Imperial College of Science and Technology, England* (24, 6, p. 876) Survey Paper based on AIAA Paper 84-4376
- J86-155 Implications of Recent Experimental Results for Modeling Reactions in Turbulent Flows.** James E. Broadwell and Paul E. Dimotakis, *California Institute of Technology* (24, 6, p. 885) Survey Paper based on AIAA Paper 84-0545
- J86-156 Multidimensional Gas Turbine Combustion Modeling: Applications and Limitations.** Hukam C. Mongia, *General Motors Corporation*; Robert S. Reynolds and Ram Srinivasan, *The Garrett Turbine Engine Company* (24, 6, p. 890) Survey Paper based on AIAA Paper 84-0477
- J86-157 Laser Measurements on Nonpremixed H₂ Air Flames for Assessment of Turbulent Combustion Models.** Michael C. Drake, Robert W. Pitz and Marshall Lapp, *General Electric Company* (24, 6, p. 905) Survey Paper based on AIAA Paper 84-0544
- J86-158 Laser Measurements and Stochastic Simulations of Turbulent Reacting Flows.** Sheridan C. Johnston, Robert W. Dibble, Robert W. Schefer, William T. Ashurst and Wolfgang Kollmann, *Sandia National Laboratories* (24, 6, p. 918) Survey Paper based on AIAA Paper 84-0543
- J86-159 Behavior of Wall Jet in Laminar-to-Turbulent Transition.** Paolo Mele and Mario Morganti, *University of Rome, Italy*; Marie F. Scibilia, *Centre National de la Recherche Scientifique, France*; and André Lasek, *Centre National de la Recherche Scientifique* (24, 6, p. 938) Synoptic
- J86-160 Flight Effects on Noise from Coaxial Dual Flow, Part II: Heated Jets.** R. Dash, *NASA Ames Research Center* (24, 6, p. 940) Article
- J86-161 Three-Dimensional Adaptive Grid Method.** Kazuhiro Nakahashi and George S. Deiwert, *NASA Ames Research Center* (24, 6, p. 943) Article based on AIAA Paper 85-0486
- J86-162 The Influence of Source Location on the Structural-Acoustic Interaction of Cylinders.** J. J. Kelly, *Old Dominion University*; and C. R. Fuller, *Virginia Polytechnic Institute and State University* (24, 6, p. 955) Article
- J86-163 Direct Numerical Simulations of a Reacting Mixing Layer with Chemical Heat Release.** P. A. McMurtry, W.-H. Jou, J. J. Riley and R. W. Metcalfe, *Flow Research Company* (24, 6, p. 962) Article
- J86-164 Pressure-Strain Correlations in Curved Wall Boundary Layers.** S. K. Hong and S. N. B. Murthy, *Purdue University* (24, 6, p. 971) Article based on AIAA Paper 84-1671
- J86-165 Turbulent Flow in Square Ducts After an Expansion.** Shin-ichi Nakao, *National Research Laboratory of Metrology, Japan* (24, 6, p. 979) Article
- J86-166 Eigenvalue Reanalysis of Locally Modified Structures Using a Generalized Rayleigh's Method.** Bo Ping Wang, *University of Texas at Arlington*; and Walter D. Pilkey, *University of Virginia* (24, 6, p. 983) Article based on AIAA Paper 84-0972 CP844
- J86-167 Weight Minimization of Orthotropic Flat Panels Subjected to a Flutter Speed Constraint.** L. Librescu and L. Beiner, *Tel-Aviv University, Israel* (24, 6, p. 991) Article
- J86-168 Large Amplitude Free Vibrations of Shells of Variable Thickness--A New Approach.** G. C. Sinharay and B. Banerjee, *Hooghly Mohsin College, India* (24, 6, p. 998) Article

- J86-169 Computational Method for Optimization of Structural Shapes.** J. W. Hou, J. L. Chen and J. S. Sheen, *Old Dominion University* (24, 6, p. 1005) Article based on AIAA Paper 85-0773 CP851
- J86-170 Postbuckling Analysis Using a General-Purpose Code.** Gaylen A. Thurston, *NASA Langley Research Center*; Frank A. Brogan and Peter Stehlin, *Lockheed Palo Alto Research Laboratory* (24, 6, p. 1013) Article based on AIAA Paper 85-0719 CP851
- J86-171 Component Mode Synthesis of a Vehicle Structural-Acoustic System Model.** Shung H. Sung and Donald J. Nefske, *General Motors Research Laboratories* (24, 6, p. 1021) Article
- J86-172 Comparison Between the Variational and Implicit Differentiation Approaches to Shape Design Sensitivities.** R. J. Yang and M. E. Botkin, *General Motors Research Laboratories* (24, 6, p. 1027) Article
- J86-173 Coupling Conditions for Integrating Boundary Layer and Rotational Inviscid Flow.** Peter M. Sockol, *NASA Lewis Research Center*; and William A. Johnston, *Aerospace Corporation* (24, 6, p. 1033) Technical Note
- J86-174 In-Bore Velocity Measurements in the Wake of a Subsonic Projectile.** A. F. Bicen, Y. Klifas and J. H. Whitelaw, *Imperial College of Science and Technology, England* (24, 6, p. 1035) Technical Note based on AIAA Paper 85-1676
- J86-175 Transonic Potential Flow in Hyperbolic Nozzles.** Minwoo Park and D. A. Caughey, *Cornell University* (24, 6, p. 1037) Technical Note
- J86-176 Vorticity with Variable Viscosity.** Gustave J. Hokenson, *The Hokenson Company* (24, 6, p. 1039) Technical Note
- J86-177 Triple-Velocity Products in a Channel with a Backward-Facing Step.** R. S. Amano and P. Goel, *University of Wisconsin* (24, 6, p. 1040) Technical Note
- J86-178 Numerical Evaluation of Propeller Noise Including Nonlinear Effects.** K. D. Korkan and E. von Lavante, *Texas A&M University*; and L. J. Bober, *NASA Lewis Research Center* (24, 6, p. 1043) Technical Note
- J86-179 Constraints of the Structural Modal Synthesis.** Jon-Shen Fuh and Shyi-Yaung Chen, *Kaman Aerospace Corporation* (24, 6, p. 1045) Technical Note
- J86-180 Toward a Consistent Plate Theory.** A. V. Krishna Murty, *Indian Institute of Science* (24, 6, p. 1047) Technical Note
- J86-181 Stationary Response to Second-Order Filtered White-Noise Excitation.** Tong Fang, *Duke University*; and Zhen-ni Wang, *Beijing Institute of Aeronautics and Astronautics* (24, 6, p. 1048) Technical Note
- J86-182 An Accurate Spatial Differencing Scheme for a Three-Dimensional Full Potential Equation.** Hongde Jiang and Ruixian Cai, *Chinese Academy of Science* (24, 7, p. 1057) Synoptic based on AIAA Paper 85-1662
- J86-183 Algorithm for Energy-Derived Potential Flow Hydrodynamic Coefficients.** O. Burgdorf Jr., *Westinghouse Electric Corporation* (24, 7, p. 1059) Article
- J86-184 Noise Control Characteristics of Synchrophasing, Part 1: Analytical Investigation.** C. R. Fuller, *Virginia Polytechnic Institute and State University* (24, 7, p. 1063) Article based on AIAA Paper 84-2369
- J86-185 Generation of Computational Grids Using Optimization.** Stephen R. Kennon and George S. Dulikravich, *University of Texas* (24, 7, p. 1069) Article based on AIAA Paper 85-0483
- J86-186 Far-Field Boundary Conditions for Transonic Lifting Solutions to the Euler Equations.** James L. Thomas and M. D. Salas, *NASA Langley Research Center* (24, 7, p. 1074) Article based on AIAA Paper 85-0020
- J86-187 The Effects of Cylindrical Surface Modifications on Turbulent Boundary Layers.** J. B. Johansen, *Raytheon Corporation*; and C. R. Smith, *Lehigh University* (24, 7, p. 1081) Article based on AIAA Paper 85-0547
- J86-188 Nonisentropic Propagation of Sound in Uniform Ducts Using Euler Equations.** R. S. Goonetilleke, S. G. Lekoudis and W. C. Strahle, *Georgia Institute of Technology* (24, 7, p. 1088) Article
- J86-189 Numerical Simulation of Boundary-Layer Excitation by Surface Heating/Cooling.** Alvin Bayliss, *Exxon Corporate Research Science Laboratories*; Lucio Maestrello, *NASA Langley Research Center*; Paresch Parikh, *Vigyan Research Associates Inc.*; and Eli Turkel, *Institute for Computer Applications in Science and Engineering* (24, 7, p. 1095) Article based on AIAA Paper 85-0565
- J86-190 N Atom Measurements in High-Temperature N₂-Dissociation Kinetics.** Knut Thielen and Paul Roth, *University of Duisburg, Federal Republic of Germany* (24, 7, p. 1102) Article
- J86-191 Navier-Stokes Solutions for Laminar Incompressible Flows in Forward-Facing Step Geometries.** R. W. Mei, *University of Illinois*; and A. Plotkin, *San Diego State University* (24, 7, p. 1106) Article based on AIAA Paper 86-0110
- J86-192 Performance of High-Power Gas-Flow Spark Gaps.** John M. Kuhlman and G. Marshall Molen, *Old Dominion University* (24, 7, p. 1112) Article based on AIAA Paper 85-0134
Errata (24, 10, p. 1727)
- J86-193 Mixing Enhancement in Chemical Lasers, Part I: Experiments.** Richard J. Driscoll, *Bell Aerospace Textron* (24, 7, p. 1120) Article
- J86-194 New Formulation for One-Dimensional Premixed Flames.** H. S. Mukunda and S. M. Deshpande, *Indian Institute of Science*; and A. T. Bhashyam, *Indian Institute of Technology* (24, 7, p. 1127) Synoptic
- J86-195 Laser Scattering Measurements for Gas Densities in a Swirling Flow Combustor.** R. N. Halthore and F. C. Gouldin, *Cornell University* (24, 7, p. 1129) Article based on AIAA Paper 84-0199
- J86-196 Flow Structure in Near-Nozzle Region of Gas Jet Flames.** Ö. Savas and S. R. Gollahalli, *The University of Oklahoma* (24, 7, p. 1137) Article
- J86-197 Particle Radiative Feedback in Ammonium Perchlorate Deflagration.** M. Quinn Brewster, *University of Utah* (24, 7, p. 1141) Article based on AIAA Paper 85-1071

- J86-198 Studies of Turbulent Flow-Flame Interaction.** D. R. Ballal, *University of Dayton* (24, 7, p. 1148) Article based on AIAA Paper 85-1247
- J86-199 CARS Measurements in the Near-Wake Region of an Axisymmetric Bluff-Body Combustor.** G. L. Switzer, L. P. Goss and D. D. Trump, *System Research Laboratories, Inc.*; C. M. Reeves, J. S. Stutrud, R. P. Bradley and W. M. Roquemore, *U.S. Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (24, 7, p. 1155) Article based on AIAA Paper 85-1106
- J86-200 Stress Analysis of a Mode I Edge Delamination Specimen for Composite Materials.** James M. Whitney, *U. S. Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (24, 7, p. 1163) Article based on AIAA Paper 85-0611 CP851
- J86-201 Design Derivatives of Eigenvalues and Eigenfunctions for Self-Adjoint Distributed Parameter Systems.** Robert Reiss, *Howard University* (24, 7, p. 1169) Article based on AIAA Paper 85-0634 CP851
- J86-202 Geometric Programming Strategies in Large-Scale Structural Synthesis.** Prabhat Hajela, *University of Florida* (24, 7, p. 1173) Article based on AIAA Paper 85-0698 CP851
- J86-203 Role of Shocks in Transonic/Supersonic Compressor Rotor Flutter.** O. O. Bendiksen, *Princeton University* (24, 7, p. 1179) Article
- J86-204 First- and Second-Order Sensitivity Analysis of Linear and Nonlinear Structures.** Raphael T. Haftka, *Virginia Polytechnic Institute and State University*; and Zenon Mróz, *Institute of Fundamental Technological Research, Poland* (24, 7, p. 1187) Article
- J86-205 Lifting-Line Solution for a Symmetrical Thin Wing in Ground Effect.** C. H. Tan, *University of Maryland*; and A. Plotkin, *San Diego State University* (24, 7, p. 1193) Technical Note
- J86-206 Integration of Singular Functions Associated with Lifting Surface Theory.** Becker van Niekirk, *Stanford University* (24, 7, p. 1194) Technical Note
- J86-207 Quasi-One-Dimensional Gas/Particle Nozzle Flows with Shock.** Magnar Forde, *Norwegian Institute of Technology* (24, 7, p. 1196) Technical Note
- J86-208 Surface Renewal Model for Turbulent Boundary-Layer Flow.** L. C. Thomas and K. F. Loughlin, *University of Petroleum and Minerals, Saudi Arabia* (24, 7, p. 1199) Technical Note
- J86-209 Experimental Study of Surface Pressure in Three-Dimensional Turbulent Jet/Boundary Interaction.** Christos D. Tsitouras and Latif M. Jiji, *The City College of the City University of New York* (24, 7, p. 1201) Technical Note
- J86-210 Transient Induced Drag.** D. Weihs and J. Katz, *NASA Ames Research Center* (24, 7, p. 1203) Technical Note
- J86-211 Unified Supersonic/Hypersonic Similitude for Oscillating Wedges and Plane Ogives.** Kunal Ghosh, *Indian Institute of Technology* (24, 7, p. 1205) Technical Note
- J86-212 Shock/Turbulent Boundary-Layer Interaction with Wall Function Boundary Conditions.** S. K. Saxena and R. C. Mehta, *Vikram Sarabhai Space Centre, India* (24, 7, p. 1207) Technical Note
- J86-213 Nonuniform Nozzle Flow Effects on Base Pressure at Supersonic Flight Speeds.** A. L. Addy, J. C. Dutton and V. A. Amatucci, *University of Illinois, Urbana-Champaign* (24, 7, p. 1209) Technical Note
- J86-214 Swirl Generator for Independent Variation of Swirl and Velocity Profile.** W. L. H. Hallett, *University of Ottawa, Canada* (24, 7, p. 1212) Technical Note
- J86-215 Vibration of a Large Space Beam Under Gravity Effect.** Choon-Foo Shih, Jay C. Chen and John Garba, *California Institute of Technology* (24, 7, p. 1213) Technical Note
- J86-216 Trapping of a Free Vortex by Airfoils with Surface Suction.** Chuen-Yen Chow, Chung-Lung Chen and Ming-Ke Huang, *University of Colorado* (24, 8, p. 1217) Synoptic based on AIAA Paper 85-0446
- J86-217 Recent Developments in Rotary-Wing Aerodynamic Theory.** Wayne Johnson, *NASA Ames Research Center* (24, 8, p. 1219) Survey Paper
- J86-218 Airfoil Trailing-Edge Flow Measurements.** Thomas F. Brooks and Michael A. Marcolini, *NASA Langley Research Center*; and Dennis S. Pope, *Kentron International, Inc.* (24, 8, p. 1245) Article based on AIAA Paper 84-2266
- J86-219 Parabolized Navier-Stokes Analysis of Three-Dimensional Supersonic and Subsonic Jet Mixing Problems.** S. M. Dash, D. E. Wolf and N. Sinha, *Science Applications International Corporation* (24, 8, p. 1252) Synoptic based on AIAA Paper 84-1525
- J86-220 Experimental Investigation of Shock-Interface Interactions.** L. Houas, R. Brun and M. Hanana, *University of Provence, France* (24, 8, p. 1254) Synoptic
- J86-221 An Iterative Finite Element-Integral Technique for Predicting Sound Radiation from Turbofan Inlets in Steady Flight.** Scott J. Horowitz, Robert K. Sigman and Ben T. Zinn, *Georgia Institute of Technology* (24, 8, p. 1256) Article based on AIAA Paper 82-0124
- J86-222 Passive Control of Jets with Indeterminate Origins.** R. W. Wlezien and V. Kibens, *McDonnell Douglas Corporation* (24, 8, p. 1263) Article based on AIAA Paper 84-2299
- J86-223 Noise Control Characteristics of Synchrophasing, Part 2: Experimental Investigation.** James D. Jones and C. R. Fuller, *Virginia Polytechnic Institute and State University* (24, 8, p. 1271) Article based on AIAA Paper 84-2370
- J86-224 Quasi-Conservative Lambda Formulation.** Andrea Dadone and Vinicio Magi, *Università di Bari, Italy* (24, 8, p. 1277) Article based on AIAA Paper 85-0088
- J86-225 Computations of the Contraction Coefficient of Unsymmetrical Bends.** R. R. Mankbadi and S. S. Zaki, *Cairo University, Egypt* (24, 8, p. 1285) Article
- J86-226 Numerical Studies of Motion and Decay of Vortex Filaments.** C. H. Liu, *NASA Langley Research Center*; John Tavantzis, *New Jersey Institute of Technology*; and Lu Ting, *New York University* (24, 8, p. 1290) Article
- J86-227 Development of an Iterative Boundary-Layer-Type Solver for Axisymmetric Separated Flows.** Ahmad A. M. Halim, *The George Washington University* (24, 8, p. 1298) Article based on AIAA Paper 85-1505 CP854

- J86-228 Numerical Solution of Steady Navier-Stokes Problems Using Integral Representations.** C. M. Wang and J. C. Wu, *Georgia Institute of Technology* (24, 8, p. 1305) Article based on AIAA Paper 85-0034
- J86-229 Modern Developments in Flow Visualization.** Gary S. Settles, *The Pennsylvania State University* (24, 8, p. 1313) Survey Paper based on AIAA Paper 84-1599
- J86-230 Convective and Free Surface Instabilities Provoked by Heating Below an Interface.** G. Gouesbet, M. E. Weill and E. Lefort, *Institut National Supérieur de Chimie Industrielle de Rouen, France* (24, 8, p. 1324) Article based on AIAA Paper 85-0944
- J86-231 Two-Dimensional Model of Laser-Sustained Plasmas in Axisymmetric Flowfields.** Ronald J. Glumb and Herman Krier, *University of Illinois* (24, 8, p. 1331) Article based on AIAA Paper 85-1551
- J86-232 Laser Anemometer Measurements in a Compressor Rotor Flowfield at Off-Design Conditions.** P. Popovski and B. Lakshminarayana, *The Pennsylvania State University* (24, 8, p. 1337) Article
- J86-233 Simplified Lattice Beam Elements for Geometrically Nonlinear Static, Dynamic, and Postbuckling Analysis.** D. T. Berry and T. Y. Yang, *Purdue University* (24, 8, p. 1346) Synoptic based on AIAA Paper 85-0694 CP851
- J86-234 Stress Analysis Method for a Clearance-Fit Bolt Under Bearing Loads.** R. A. Naik and J. H. Crews Jr., *NASA Langley Research Center* (24, 8, p. 1348) Article based on AIAA Paper 85-0746 CP851
- J86-235 Random Response of Beams and Plates with Slipping at Support Boundaries.** D. M. Tang and E. H. Dowell, *Duke University* (24, 8, p. 1354) Article
- J86-236 Fatigue Lifetime Estimation of Structures Subjected to Dynamic Loading.** D. De Vis, R. Snoeys and P. Sas, *Katholieke Universiteit Leuven, Belgium* (24, 8, p. 1362) Article
- J86-237 Optimal Structural Modifications to Enhance the Active Vibration Control of Flexible Structures.** N. S. Khot, *U.S. Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base*; V. B. Venkayya, *U. S. Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base*; and F. E. Eastep, *University of Dayton* (24, 8, p. 1368) Article based on AIAA Paper 85-0627 CP851
- J86-238 Computation of the Potential Flow over Airfoils with Cusped or Thin Trailing Edges.** P. L. Ardouneau, *Ecole Nationale Supérieure de Mécanique et d'Aérotechnique, France* (24, 8, p. 1375) Technical Note
- J86-239 Cancellation Zone in Supersonic Lifting Wing Theory.** Angel Sanz, *Universidad Polytechnica, Spain* (24, 8, p. 1377) Technical Note
- J86-240 Transonic Airfoil Calculations Including Wind Tunnel Wall-Interference Effects.** L. S. King and D. A. Johnson, *NASA Ames Research Center* (24, 8, p. 1378) Technical Note
- J86-241 Effect of Blunt Trailing Edge on Rotor Broadband Noise.** S.-T. Chou and A. R. George, *Cornell University* (24, 8, p. 1380) Technical Note
- J86-242 Turbulent Boundary-Layer Modification by Surface Riblets.** E. V. Bacher, *AT&T Bell Laboratories*; and C. R. Smith, *Lehigh University* (24, 8, p. 1382) Technical Note based on AIAA Paper 85-0548
- J86-243 Observations on the Structure of an Edge-Tone Flowfield.** A. Krothapalli, *The Florida State University*; and W. C. Horne, *NASA Ames Research Center* (24, 8, p. 1385) Technical Note
- J86-244 Local Equilibrium Assumption for Round Jet Calculations.** Ronald M. C. So, *Arizona State University*; and B. C. Hwang, *David W. Taylor Naval Ship Research and Development Center* (24, 8, p. 1388) Technical Note
- J86-245 Numerical Solution to Rarefaction or Shock Wave/Duct Area-Change Interaction.** Ozer Igra, *Ben-Gurion University of the Negev, Israel*; and Joseph Falcovitz, *Rafael Ballistic Center, Israel* (24, 8, p. 1390) Technical Note
- J86-246 Rocket Motor Flow-Turning Losses.** U. G. Hegde and B. T. Zinn, *Georgia Institute of Technology* (24, 8, p. 1394) Technical Note
- J86-247 Stress Analysis of Short Beams.** Shin-ichi Suzuki, *Nagoya University, Japan* (24, 8, p. 1396) Technical Note
- J86-248 Hybrid Singular Element Design for the Bending Analysis of Bimaterial Thin Cracked Plates.** Wen-Hwa Chen and Chyan-Bin Hwu, *National Tsing Hua University, Taiwan* (24, 8, p. 1399) Technical Note
- J86-253 Finite Element Navier-Stokes Calculation of Three-Dimensional Turbulent Flow Near a Propeller.** D. H. Pelletier, *Ecole Polytechnique, Montreal, Canada*; and J. A. Schetz, *Virginia Polytechnic Institute and State University* (24, 9, p. 1409) Article based on AIAA Paper 85-0365
- J86-254 Vortex Panel Calculation of Wake Rollup Behind a Large Aspect Ratio Wing.** D. T. Yeh, *Stanford University*; and A. Plotkin, *San Diego State University* (24, 9, p. 1417) Article based on AIAA Paper 85-1561
- J86-255 Application of Time-Domain Unsteady Aerodynamics to Rotary-Wing Aeroelasticity.** M. A. H. Dinyavari and P. P. Friedmann, *University of California, Los Angeles* (24, 9, p. 1424) Article based on AIAA Paper 85-0763 CP851
- J86-256 Computation of Sharp-Fin-Induced Shock Wave/Turbulent Boundary-Layer Interactions.** C. C. Horstmann, *NASA Ames Research Center* (24, 9, p. 1433) Article
- J86-257 Convergence Acceleration for a Three-Dimensional Euler/Navier-Stokes Zonal Approach.** Jolen Flores, *NASA Ames Research Center* (24, 9, p. 1441) Synoptic based on AIAA Paper 85-1495
- J86-258 Relative Efficiencies for Parallel and Perpendicular Entrainment Flow Paths.** T. P. Schmidt, S. K. Ali and J. F. Foss, *Michigan State University* (24, 9, p. 1443) Synoptic
- J86-259 Variational Solution of Blasius Flow for Skin Friction and Heat Transfer.** P. Singh, *Indian Institute of Technology*; and S. Antony Raj, *Presidency College, India* (24, 9, p. 1445) Synoptic
- J86-260 Turbulent Flow Around a Wing/Fuselage-Type Junction.** L. R. Kubendran, *NASA Langley Research Center*; H. M. McMahon and J. E. Hubbartt, *Georgia Institute of Technology* (24, 9, p. 1447) Article based on AIAA Paper 85-0040
- J86-261 Comparison of Finite Volume Flux Vector Splittings for the Euler Equations.** W. Kyle Anderson and James L. Thomas, *NASA Langley Research Center*; and Bram Van Leer, *Delft University of Technology* (24, 9, p. 1453) Article based on AIAA Paper 85-0122

- J86-262 Spectral Methods for Modeling Supersonic Chemically Reacting Flowfields.** J. Philip Drummond, M. Yousuff Hussaini and Thomas A. Zang, *NASA Langley Research Center* (24, 9, p. 1461) Article based on AIAA Paper 85-0302
- J86-263 Two-Dimensional Blade-Vortex Flow Visualization Investigation.** E. R. Booth Jr. and J. C. Yu, *NASA Langley Research Center* (24, 9, p. 1468) Article based on AIAA Paper 84-2307
- J86-264 Investigation of the Acoustic Boundary Layer in Porous-Walled Ducts with Flow.** U. G. Hegde, F. Chen and B. T. Zinn, *Georgia Institute of Technology* (24, 9, p. 1474) Article based on AIAA Paper 85-0078
- J86-265 Numerical Experiments of Axisymmetric Flow in a Nonuniform Gravitational Field.** Michele G. Macaraeg, *NASA Langley Research Center* (24, 9, p. 1483) Article based on AIAA Paper 85-1661
- J86-266 Investigation of Flow Structures of a Basic Annular Jet.** K. M. Lam and N. W. M. Ko, *University of Hong Kong* (24, 9, p. 1488) Article
- J86-267 Numerical Simulations of Active Stabilization of Laminar Boundary Layers.** Ralph W. Metcalfe, Christopher J. Rutland, James J. Riley and James H. Duncan, *Flow Research Company* (24, 9, p. 1494) Article based on AIAA Paper 85-0567
- J86-268 The Flame Structure and Vorticity Generated by a Chemically Reacting Transverse Jet.** A. R. Karagozian, *University of California, Los Angeles* (24, 9, p. 1502) Article
- J86-269 Experimental and Numerical Investigation of Supersonic Turbulent Flow Through a Square Duct.** D. O. Davis and F. B. Gessner, *University of Washington*; and G. D. Kerlick, *Informatics General Corporation, NASA Ames Research Center* (24, 9, p. 1508) Article based on AIAA Paper 85-1622
- J86-270 Calculation of Plasma Properties in Ion Sources.** John R. Brophy and Paul J. Wilbur, *Colorado State University* (24, 9, p. 1516) Article
- J86-271 Effect of Two Endwall Contours on the Performance of an Annular Nozzle Cascade.** S. H. Moustapha, *Pratt and Whitney Canada Inc.*; and R. G. Williamson, *National Research Council of Canada* (24, 9, p. 1524) Article based on AIAA Paper 85-1218
- J86-272 Critical Shear Loading of Curved Sandwich Panels Faced with Fiber-Reinforced Plastic.** Koganti Mohana Rao, *Indian Institute of Technology*; and H. R. Maeyer-Piening, *Swiss Federal Institute of Technology* (24, 9, p. 1531) Article
- J86-273 Nonlinear Theory for Plates and Shells Including the Effects of Transverse Shearing.** Manuel Stein, *NASA Langley Research Center* (24, 9, p. 1537) Article based on AIAA Paper 85-0671 CP851
- J86-274 Nonlinear Analysis of Anisotropic Panels.** Ahmed K. Noor and Jeanne M. Peters, *George Washington University Center, NASA Langley Research Center* (24, 9, p. 1545) Article
- J86-275 Propeller Design by Optimization.** Magdi H. Rizk and Wen-Huei Jou, *Flow Research Company* (24, 9, p. 1554) Technical Note
- J86-276 Modification of the Karman-Vortex Street in the Freestream.** Wesley L. Goodman, *NASA Langley Research Center* (24, 9, p. 1556) Technical Note
- J86-277 Influence of Trailing-Edge Meshes on Skin Friction in Navier-Stokes Calculations.** Werner Haase, *Dornier GmbH, Friedrichshafen, Federal Republic of Germany* (24, 9, p. 1557) Technical Note
- J86-278 Investigation of Surface Roughness Effects on Adiabatic Wall Temperature.** B. K. Hodge, Robert P. Taylor and Hugh W. Coleman, *Mississippi State University* (24, 9, p. 1560) Technical Note based on AIAA Paper 85-1657
- J86-279 Constant-Density Approximation to Taylor-Maccoll Solution.** C. S. Moorthy, *Indian Institute of Technology* (24, 9, p. 1561) Technical Note
- J86-280 Planar Imaging of a Turbulent Methane Jet.** Alexander Vranos and David S. Liscinsky, *United Technologies Research Center* (24, 9, p. 1564) Technical Note based on AIAA Paper 85-1444
- J86-283 Aerodynamics of Two-Dimensional Blade-Vortex Interaction.** G. R. Srinivasan, *JAI Associates, Inc.*; W. J. McCroskey and J. D. Baeder, *U. S. Army Aeroflightdynamics Directorate--AVSCOM, NASA Ames Research Center* (24, 10, p. 1569) Article based on AIAA Paper 85-1560
- J86-284 Active Transition Fixing and Control of the Boundary Layer in Air.** Lucio Maestrello, *NASA Langley Research Center* (24, 10, p. 1577) Article based on AIAA Paper 85-0564
- J86-285 Interactions of Coupled Acoustic and Vortical Instability.** T. J. Chung and J. L. Sohn, *University of Alabama* (24, 10, p. 1582) Article
- J86-286 Flow Induced at a Wall by a Vortex Pair.** S. Ersoy and J. D. A. Walker, *Lehigh University* (24, 10, p. 1597) Article based on AIAA Paper 85-1583
- J86-287 Turbulent Time Scale for Turbulent-Flow Calculations.** S. Zeierman and M. Wolfshtein, *Technion--Israel Institute of Technology* (24, 10, p. 1606) Article based on AIAA Paper 85-1491 CP854
- J86-288 Two-Dimensional Separating Turbulent Boundary Layers.** W. H. Schofield, *Aeronautical Research Laboratories* (24, 10, p. 1611) Article
- J86-289 Phase Averaged Transverse Vorticity Measurements in an Excited, Two-Dimensional Mixing Layer.** Peter J. Disimile, *Michigan State University* (24, 10, p. 1621) Article based on AIAA Paper 85-1648
- J86-290 Inverse Mode Calculations of the Incompressible Turbulent Boundary Layer on an Ellipsoid.** S. F. Radwan and S. G. Lekoudis, *Georgia Institute of Technology* (24, 10, p. 1628) Article based on AIAA Paper 85-1564
- J86-291 Determination of the Separation Point in Laminar Boundary-Layer Flows.** V. A. Wehrle, *Communications Research Centre, Ottawa, Canada* (24, 10, p. 1636) Article based on AIAA Paper 86-0111
- J86-292 Modeling of Transition and Surface Roughness Effects in Boundary-Layer Flows.** W. J. Feiereisen and M. Acharya, *Brown Boveri Research Center, Switzerland* (24, 10, p. 1642) Article
- J86-293 Laser-Induced Thickness Stretch Motion of a Transversely Constrained Irradiated Slab.** T. Paramasivam, *Wichita State University*; and H. Reismann, *State University of New York, Buffalo* (24, 10, p. 1650) Article

J86-294 Continuous Wave Laser Gas Heating by Sustained Plasmas in Flowing Argon. H. Krier, J. Mazumder, T. J. Rockstroh, T. D. Bender and R. J. Glumb, *University of Illinois* (24, 10, p. 1656) Article based on AIAA Paper 85-1551

J86-295 Power Absorption in Laser-Sustained Argon Plasmas. Dennis Keefer, Richard Welle and Carroll Peters, *The University of Tennessee Space Institute* (24, 10, p. 1663) Article based on AIAA Paper 85-1552

J86-296 Low-Pressure Burning of Catalyzed Composite Propellants. S. Krishnan and C. Periasamy, *Indian Institute of Technology* (24, 10, p. 1670) Article

J86-297 Alternative Approximation Concepts for Space Frame Synthesis. R. V. Lust and L. A. Schmit, *University of California, Los Angeles* (24, 10, p. 1676) Article based on AIAA Paper 85-0696 CP851

J86-298 Free Vibration of Rectangular Plates with Two Symmetrically Distributed Clamps Along One Edge. Daniel J. Gorman, *University of Ottawa* (24, 10, p. 1685) Article

J86-299 Optimum Design of Composite Honeycomb Sandwich Panels Subjected to Uniaxial Compression. Jack R. Vinson, *University of Delaware* (24, 10, p. 1690) Article

J86-300 Large-Amplitude Dynamic Analysis of Composite Moderately Thick Elliptical Plates. M. Sathyamoorthy, *Clarkson University* (24, 10, p. 1697) Article based on AIAA Paper 85-0653 CP851

J86-301 Second-Order Thickness Terms in Unsteady Wing Theory. Weikai Gu, *Academia Sinica, Beijing* (24, 10, p. 1702) Technical Note

J86-302 Wake Periodicity in Subsonic Bluff-Body Flows. J. L. F. Porteiro, *University of South Florida* (24, 10, p. 1703) Technical Note

J86-303 Grid Size Dependence on Convergence for Computation of the Navier-Stokes Equations. Young June Moon, *Stanford University* (24, 10, p. 1705) Technical Note

J86-304 Spacing of Streamwise Vortices on Concave Walls. Jerry D. Swearingen and Ron F. Blackwelder, *University of Southern California* (24, 10, p. 1706) Technical Note based on AIAA Paper 83-0380

J86-305 Formulas for Venting or Charging Gas from a Single Volume. H. T. Yang, *Hughes Aircraft Company* (24, 10, p. 1709) Technical Note

J86-306 Separated Flow Treatment with a New Turbulence Model. Uriel C. Goldberg, *Rockwell International Science Center* (24, 10, p. 1711) Technical Note

J86-307 Measurement of the Speed of Sound in Ice. Alphonso C. Smith and Doron Kishoni, *NASA Langley Research Center* (24, 10, p. 1713) Technical Note

J86-308 Noninvasive Experimental Technique for the Measurement of Unsteady Velocity Fields. L. Lourenco and A. Krothapalli, *Florida State University*; J. M. Buchlin and M. L. Riethmuller, *von Kármán Institute for Fluid Dynamics, Belgium* (24, 10, p. 1715) Technical Note

J86-309 Multiple-Scale Turbulence Model in Confined Swirling Jet Predictions. C. P. Chen, *NASA Marshall Space Flight Center* (24, 10, p. 1717) Technical Note

J86-310 Analogy for Postbuckling Structural Resistance Capability. Elie Yitzhak and Menahem Baruch, *Technion-Israel Institute of Technology* (24, 10, p. 1719) Technical Note

J86-311 Buckling of Composite Plates Using Shear Deformable Finite Elements. Frank Kozma, *LTV Corporation*; and Ozden O. Ochoa, *Texas A&M University* (24, 10, p. 1721) Technical Note

J86-312 Application of Diverging Motions to Calculate Loads for Oscillating Motions. M. H. L. Hounjet, *National Aerospace Laboratory (NLR), the Netherlands* (24, 10, p. 1723) Technical Note

J86-313 An Approach for Reducing Computational Requirements in Modal Identification. Samir R. Ibrahim, *Old Dominion University* (24, 10, p. 1725) Technical Note based on AIAA Paper 85-0811 CP851

J86-315 Transonic Vortex Flows Past Delta Wings: Integral Equation Approach. Osama A. Kandil, *Old Dominion University*; and E. Carson Yates Jr., *NASA Langley Research Center* (24, 11, p. 1729) Article based on AIAA Paper 85-1582

J86-316 Multigrid Solution of the Euler Equations Using Implicit Schemes. Antony Jameson and Seokkwan Yoon, *Princeton University* (24, 11, p. 1737) Article based on AIAA Paper 85-0293

J86-317 Navier-Stokes Computations of Transonic Flows with a Two-Equation Turbulence Model. Jubaraj Sahu, *Ballistic Research Laboratory, U.S. Army LABCOM, Aberdeen Proving Ground*; and James E. Danberg, *University of Delaware* (24, 11, p. 1744) Article based on AIAA Paper 85-0373

J86-318 Characteristics of Jet Impingement in a Side-Dump Combustor. Nagy S. Nosseir and Shabtay Behar, *San Diego State University* (24, 11, p. 1752) Article

J86-319 Theoretical and Experimental Description for a Radial Supersonic Flowfield. N. L. Rapagnani, *U.S. Air Force Weapons Laboratory, Kirtland Air Force Base*; and F. R. Zumpano, *United Technologies Research Center* (24, 11, p. 1758) Article

J86-320 Injection-Induced Flows in Porous-Walled Ducts. Robert A. Beddini, *University of Illinois at Urbana-Champaign* (24, 11, p. 1766) Article

J86-321 Sidewall Muffler Design for Pulsed Exciplex Lasers. Charles J. Knight, *Avco Everett Research Laboratory, Inc.* (24, 11, p. 1774) Article based on AIAA Paper 85-0389

J86-322 Migration of the Separation Point on a Deforming Cylinder. S. P. Lin and D. Mekala, *Clarkson University*; G. T. Chapman and M. Tobak, *NASA Ames Research Center* (24, 11, p. 1783) Article

J86-323 Two-Dimensional Shear-Layer Entrainment. Paul E. Dimotakis, *California Institute of Technology* (24, 11, p. 1791) Article based on AIAA Paper 84-0368

J86-324 Calculating the Statistics of Forced Response of a Mistuned Bladed Disk Assembly. Alok Sinha, *Pennsylvania State University* (24, 11, p. 1797) Article based on AIAA Paper 85-0810 CP851

- J86-325 Rotor Wake Characteristics of a Transonic Axial-Flow Fan.** M. D. Hathaway, *U.S. Army Propulsion Directorate (AVSCOM)*; J. B. Gertz and A. H. Epstein, *Massachusetts Institute of Technology*; and A. J. Strazisar, *NASA Lewis Research Center* (24, 11, p. 1802) Article based on AIAA Paper 85-1133
- J86-326 Detonability of RDX Dust in Air/Oxygen Mixtures.** F. P. Lee, C. W. Kauffman, M. Sichel and J. A. Nicolls, *University of Michigan* (24, 11, p. 1811) Article based on AIAA Paper 85-0392
- J86-327 Coalescence/Dispersion Modeling of Turbulent Combustion in Jet-Stirred Reactor.** George W. Butler and David T. Pratt, *University of Washington* (24, 11, p. 1817) Article
- J86-328 Experimental Investigation on Advanced Composite-Stiffened Structures Under Uniaxial Compression and Bending.** Giulio Romeo, *Polytechnic Institute of Turin, Italy* (24, 11, p. 1823) Article based on AIAA Paper 85-0674 CP851
- J86-329 Importance of Anisotropy on Buckling of Compression-Loaded Symmetric Composite Plates.** Michael P. Nemeth, *NASA Langley Research Center* (24, 11, p. 1831) Article based on AIAA Paper 85-0673 CP851
- J86-330 Nonlinear Finite Element Analysis of Thick Composite Plates Using Cubic Spline Functions.** Ronald L. Hinrichsen and Anthony N. Palazotto, *U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base* (24, 11, p. 1836) Article based on AIAA Paper 85-0718 CP851
- J86-331 Bounding Solutions of Geometrically Nonlinear Viscoelastic Problems.** John M. Stubstad and George J. Simitses, *Georgia Institute of Technology* (24, 11, p. 1843) Article based on AIAA Paper 86-0943 CP863
- J86-332 Arbitrarily Laminated, Anisotropic Cylindrical Shell Under Internal Pressure.** Reaz A. Chaudhuri, *University of Utah*; K. Balaraman and Vincent X. Kunukasseril, *Indian Institute of Technology* (24, 11, p. 1851) Article
- J86-333 Radiative Entropy Production.** Vedat S. Arpaci, *University of Michigan* (24, 11, p. 1859) Synoptic based on AIAA Paper 85-0408
- J86-334 Pyrolysis-Induced Fragmentation and Blowoff of Laser-Irradiated Surfaces.** Girard A. Simons, *Physical Sciences Inc.* (24, 11, p. 1861) Article
- J86-335 Turbulent Mixing in Two-Dimensional Ducts with Transverse Jets.** Robert E. Breidenthal and Kwok-On Tong, *Boeing Aerospace Company*; Grant S. Wong, Rolf D. Hamerquist and Peter B. Landry, *University of Washington* (24, 11, p. 1867) Technical Note based on AIAA Paper 85-1600
- J86-336 Comparison of Pressure-Strain Correlation Models for the Flow Behind a Disk.** R. S. Amano, *University of Wisconsin* (24, 11, p. 1870) Technical Note
- J86-337 Reverse Flow Radius in Vortex Chambers.** G. H. Vatisas, S. Lin and C. K. Kwok, *Concordia University, Canada* (24, 11, p. 1872) Technical Note based on AIAA Paper 84-1548
- J86-338 Boundary-Layer Flow Past a Cylinder with Massive Blowing.** R. Vasantha and G. Nath, *Indian Institute of Science* (24, 11, p. 1874) Technical Note
- J86-339 Acceleration-Dependent Fluid Forces.** V. R. Murthy, *Syracuse University* (24, 11, p. 1876) Technical Note
- J86-340 Optical Constants of Propellant-Grade Ammonium Perchlorate.** Rajesh S. Patel and M. Quinn Brewster, *University of Utah* (24, 11, p. 1878) Technical Note
- J86-341 Identification of Structural Dynamic Systems with Nonproportional Damping.** S. Hanagud, *Georgia Institute of Technology*; M. Meyyappa, Y. P. Cheng and J. I. Craig, *Georgia Institute of Technology* (24, 11, p. 1880) Technical Note based on AIAA Paper 84-0993 CP844
- J86-342 Postbuckling of Thick Circular Plates with Edges Restrained Against Rotation.** K. Kanaka Raju and G. Venkateswara Rao, *Vikram Sarabhai Space Center, India* (24, 11, p. 1882) Technical Note
- J86-347 New Approach to Finite-State Modeling of Unsteady Aerodynamics.** C. Venkatesan and P. P. Friedmann, *University of California, Los Angeles* (24, 12, p. 1889) Article
- J86-348 Unsteady Wake Measurements of an Oscillating Flap at Transonic Speeds.** Satyanarayana Bodapati and Chyang Sheng Lee, *Joint Institute for Aeronautics and Acoustics, Stanford University* (24, 12, p. 1898) Synoptic based on AIAA Paper 84-1563
- J86-349 Turbulence Modeling for Complex Shear Flows.** B. Lakshminarayana, *Pennsylvania State University* (24, 12, p. 1900) Survey Paper based on AIAA Paper 85-1652
- J86-350 Interaction Between Two Compressible, Turbulent Free Shear Layers.** M. Samimy, *Ohio State University*; and A. L. Addy, *University of Illinois* (24, 12, p. 1918) Article based on AIAA Paper 86-0443
- J86-351 Large-Scale Effects on Local Small-Scale Chaotic Solutions to Burgers' Equation.** J. M. McDonough and R. J. Bywater, *The Aerospace Corporation* (24, 12, p. 1924) Article based on AIAA Paper 85-1653
- J86-352 Artificial Dissipation Models for the Euler Equations.** Thomas H. Pulliam, *NASA Ames Research Center* (24, 12, p. 1931) Article based on AIAA Paper 85-0438
- J86-353 The Effect of Phase-Difference on the Spreading Rate of a Jet.** R. R. Mankbadi, *Rutgers University* (24, 12, p. 1941) Article
- J86-354 Calculation of Supersonic Flows with Strong Viscous-Inviscid Interaction.** Mark Barnett and R. Thomas Davis, *University of Cincinnati* (24, 12, p. 1949) Article based on AIAA Paper 85-0016
- J86-355 Control of Coherent Structures in Reattaching Laminar and Turbulent Shear Layers.** Frederick W. Roos and Jerome T. Kegelman, *McDonnell Douglas Research Laboratories* (24, 12, p. 1956) Article based on AIAA Paper 85-0554
- J86-356 Augmented Thrust and Mass Flow Associated with Two-Dimensional Jet Reattachment.** T. S. Lund, *Joint Institute for Aeronautics and Acoustics, Stanford University* (24, 12, p. 1964) Article based on AIAA Paper 85-5002
- J86-357 Compressible Separated Flows.** H. L. Petrie, *Pennsylvania State University*; M. Samimy, *Ohio State University*; and A. L. Addy, *University of Illinois at Urbana-Champaign* (24, 12, p. 1971) Article based on AIAA Paper 85-0177
- J86-358 Transient Behavior of Liquid Jets Injected Normal to a High-Velocity Gas Stream.** D. M. Less and J. A. Schetz, *Virginia Polytechnic Institute and State University* (24, 12, p. 1979) Article

